This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

KAO

KA

UNIVERSAL GEOGRAPHY,

ON THE PRINCIPLES OF

COMPARISON AND CLASSIFICATION.

SEVENTH EDITION.

For the use of the higher classes in Academies and Schools. Constructed upon the plan of the School Geography, by the same authors. Accompanied by Royal Quarto Atlases, both ancient and modern, adapted expressly to the work, executed in a neat style, full colored.

MODERN GEOGRAPHY BY W. C. WOODBRIDGE, late Teacher in the American Asylum. Editor of the Annals of Education and Instruction.

ANCIENT GEOGRAPHY BY E. WILLARD, Principal of the Troy Female Seminary. Author of "Geography for Beginners."

The Modern part of this work has been revised by the author during his late residence at Paris (France), and subsequently in this country. The aid of Baron Humboldt and other eminent geographers in Europe, has also been availed of. The work comprises upwards of 500 full duodecimo pages, and contains more matter than is usually found in octavo volumes. The maps to the Ancient Atlas are so prepared as to exhibit the epochs in which each country became known, and both the Ancient and Modern names of places are affixed.

The following extracts from notices of this work are from the most respectable sources.

From the North American Review.

The work has been drawn up with immense industry and good success. Considering the great number of topics introduced, the author's method is clear and judicious. He that succeeds in condensing the important branches of knowledge, so as to diminish the time and labor of acquisition, is a benefactor to society, and demands the approbation and patronage of a generous public. Mrs. Willard's part of the work on Ancient Geography is perspicuous, and executed with good judgment.

From the Port Folio, Published at Philadelphia.

The plan of the work combines the attractions of novelty and ingenuity; and in the facilities it affords for acquiring useful information on the subject to which it relates, it possesses decided advantages over that which is generally in use. We can therefore recommend it without hesitation to parents and conductors of seminaries for the instruction of youth; and this judgment we are happy to find, is corroborated by the opinion of the Rev. Dr. Wylie, a teacher of long experience, and a scholar of the first order.

From Dr. Samuel B. Wylie, Philadelphia.

The work is copious in illustration, luminous in arrangement, interesting in its description of the various subjects of Natural History comprised in its plan, and in my opinion greatly superior as a text book for advanced classes, to any system of Geography which has heretofore come under my notice.

From Chauncey A. Goodrich, Professor in Yale College.

Mr. Woodbridge's Geographical Works are, in my view, distinguished by a rich variety of matter, a felicity of classification, and an accuracy of detail, which render them peculiarly valuable as text books in the instruction of young persons of both sexes.

From the Rt. Rev. T. C. Brownell, Bishop of the Diocese of Connecticut.

I have examined the enlarged edition of Mr. Woodbridge and Mrs. Willard's Universal Geography, and find it to contain important improvements upon the smaller edition, concerning which I had expressed my full approbation. The ingenious methods devised for impressing the principal facts of the science upon the minds of the students, must commend the work to the favorable notice of the instructors of youth.

From Robert Walsh, Editor of the National Gazette.

The Universal Geography, by W. C. Woodbridge, and E. Willard, on the principles of comparison and classification, is one of the most ingenious and valuable works of the kind extant, and is accompanied by an atlas of correspondent merit.

The following is extracted from "The Teacher," a Periodical Work, Edited by Dr. Wilhelm Harnisch, Director of a Seminary for Teachers in Germany. The value of the testimony is much enhanced from the fact that Germany takes the lead of all nations in geographical science.

"Two works which have appeared in the United States are even more worthy of translation. The first is '*Rudiments of Geography, &c. by W. C. Woodbridge.* Published in London, from the 7th American edition.' The second is '*System of Universal Geography, &c. by W. C. Woodbridge and Emma Willard.*'

"Those who are acquainted with our best books on Geography and the latest Geographical researches, as those of Humboldt and Retter, will indeed find little new information, but a faithful employment of the materials hitherto collected—with an excellent arrangement, and an attractive mode of exhibition. All geographical subjects are treated comparatively, and in a natural order. The maps, and the wood engravings inserted in the text, are very useful in the illustration of these subjects."

The following is the opinion of an eminent German Teacher of Geography in the Fellenberg School.

"After a thorough study of the larger Geography by Mr. Woodbridge, I express it as my decided conviction, that it is the best book of instruction in Geography, which has come to my knowledge. The work is incredibly rich in information. The fundamental principle of a comparative description of the earth which pervades the whole, is especially worthy of notice, for its novelty and excellence. An experiment which I have made with several pupils in the use of this work, has convinced me that students in pursuing the plan of Mr. W., not only attain a greater amount of knowledge, than in the ordinary method, but are introduced to the study of the Globe in a manner far better calculated to excite interest and activity of mind."

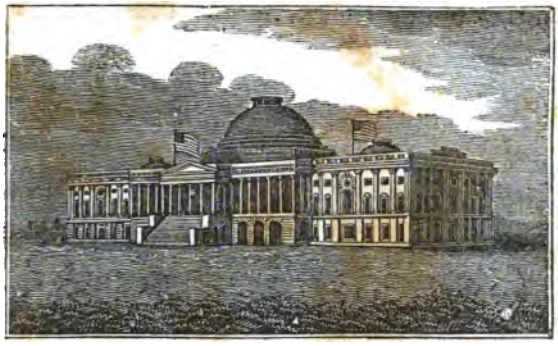
Extract of a Letter from the Secretary of the "Royal Geographical Society of London," acknowledging the receipt of a copy of Mr. Woodbridge's Universal Geography.

Your plan is one which, individually, I very much like—very superior in general interest to those systems of Geography which are mere bundles of isolated facts.

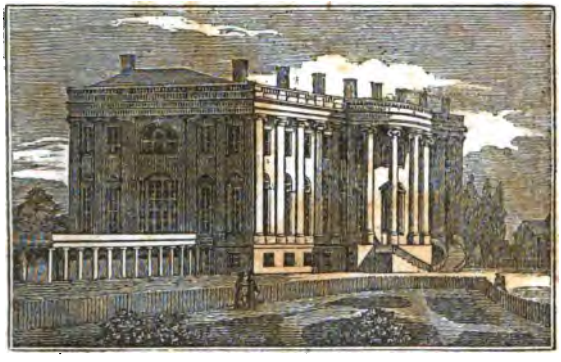
Extract of a Letter from Dr. Thomas Dick, of Scotland, to a gentlemen in the United States.

I admire most of all the School Geographies which you have done the favor to send me.

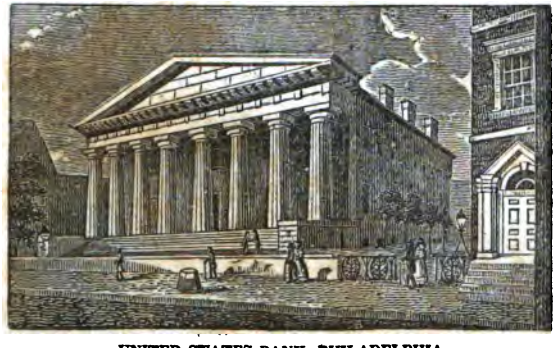
Mr. Woodbridge's "Universal Geography" is a most valuable work, and contains a greater quantity of useful information on all the subjects connected with Geography, than I have seen in some works presented to the public in large and extensive quartos.



UNITED STATES CAPITOL, WASHINGTON.

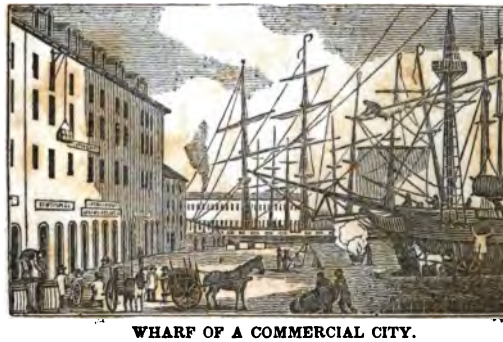


PRESIDENT'S HOUSE, WASHINGTON



UNITED STATES BANK, PHILADELPHIA.

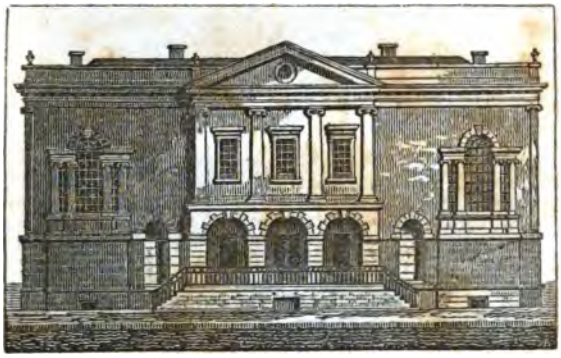
BOSTON MARKET, STREET, AND FANEUIL HALL.



WHARF OF A COMMERCIAL CITY.

The wharves of a commercial city, like New York or Philadelphia, are tl scene of constant bustle, with ships arriving and departing, and men loadir and unloading them, weighing, buying and selling goods.

BALTIMORE EXCHANGE AND WASHINGTON MONUMENT.



CHARLESTON EXCHANGE.

U. S. BRANCH BANK, SAVANNAH.

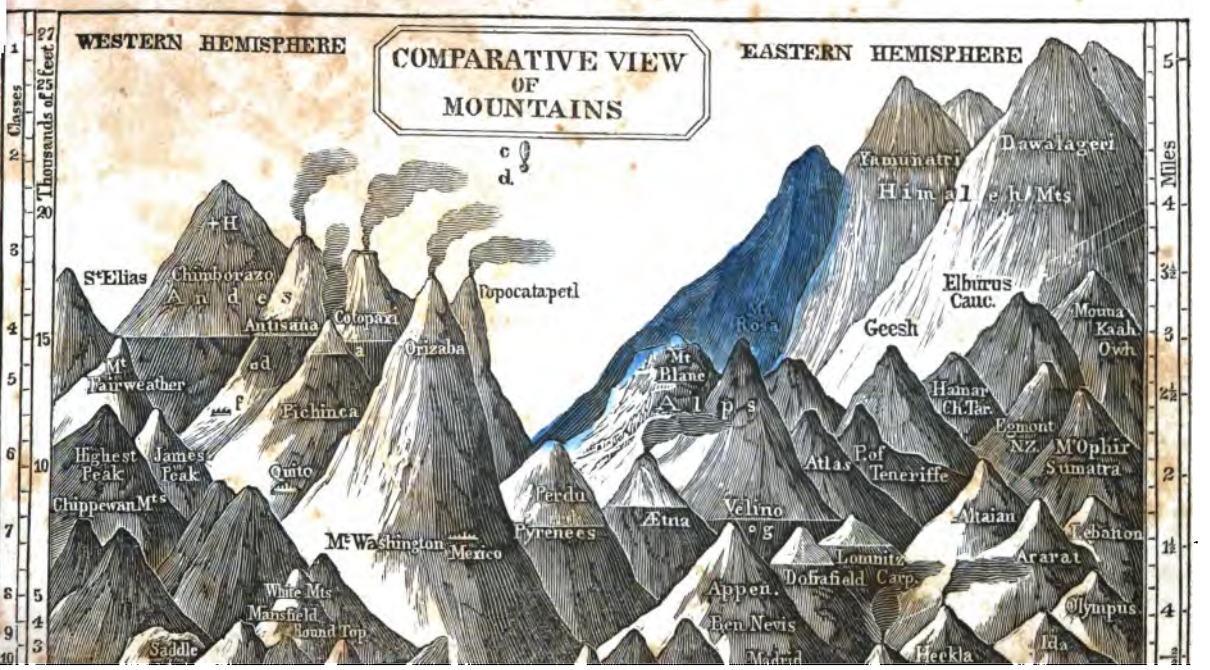
ARCADE, PROVIDENCE.

ST. PETERSBURG, RUSSIA.

DUBLIN, IRELAND.

CONSTANTINOPLE, TURKEY.

[illegible]


COMPARATIVE VIEW OF MOUNTAINS
WESTERN HEMISPHERE
EASTERN HEMISPHERE
Classes
Thousands of Feet
Miles
St Elias
Chimborazo
Andes
Antisana
Cotopaxi
Popocatapetl
Orizaba
Mt Fairweather
Pichincha
Highest Peak
James Peak
Quito
Chippewan Mts
Mt Washington
Mexico
White Mts
Mansfield
Round Top
Saddle
Ferdu
Pyrenees
Ætna
Velino
Appen.
Ben Nevis
Madrid
Mt Blanc
Alps
St Rocca
Lomnitz
Dofrafield Carp.
Atlas
P. of Teneriffe
Himalehi Mts
Tamunatri
Dawalageri
Elburus Cauc.
Geesh
Mouna Kaah
Ovdh
Hamar Ch. Tar.
Egmont N.Z.
M'Ophir Sumatra
Altaian
Lebanon
Ararat
Olympus
Ida
Heckla

A SYSTEM

OF

UNIVERSAL GEOGRAPHY,

ON THE PRINCIPLES OF

COMPARISON AND CLASSIFICATION.

BY WILLIAM CHANNING WOODBRIDGE.

ILLUSTRATED WITH MAPS AND ENGRAVINGS;

AND ACCOMPANIED BY AN

ATLAS,

EXHIBITING, IN CONNECTION WITH THE OUTLINES OF COUNTRIES, THEIR CLIMATE AND PRODUCTIONS—THE PREVAILING RELIGIONS, FORMS OF GOVERNMENT, AND DEGREES OF CIVILIZATION—AND THE COMPARATIVE SIZE OF TOWNS, RIVERS, AND MOUNTAINS.

"The very essence of science consists in generalizing, and reducing to a few classes on general principles, the multitude of individual things which every branch of human knowledge embraces. *Jamieson's Logic.*

SEVENTH EDITION.

HARTFORD:

PUBLISHED BY JOHN BEACH;

AND FOR SALE BY THE PRINCIPAL BOOKSELLERS IN THE UNITED STATES.

1836

THE NEW YORK
PUBLIC LIBRARY
466608 A
ASTOR, LENOX AND
TILDEN FOUNDATIONS
R 1930

PUBLISHER'S NOTICE.

In the present edition of this work, the statements of the Population of Countries, States, &c., have been corrected from the latest and best authorities; a few other corrections and additions to adapt the work to the present state of the world have also been made. The "Contents" have been arranged upon a new plan, and one which facilitates reference to any particular topics treated of in the work. This arrangement is believed to be a great improvement.. The Publisher has great confidence in the accuracy of that part of the work which relates to foreign countries, on account of the very favorable opportunities enjoyed by the author during his residence and travels in Europe; while he at the same time believes that the part which relates to our own country, will not be found deficient. This work embraces a greater amount of Geographical information, than has ever been presented in any other single volume. The Ancient Atlas, adapted to this work, with the ancient and modern names of places, prepared by Mrs. Willard, the author of the Ancient Geography, is sold separately to those who desire it.

DISTRICT OF CONNECTICUT, *ss.*

BE IT REMEMBERED, That on the eleventh day of June, in the forty-eighth year of the Independence of the United States of America, William C. Woodbridge, of the said District, and Emma Willard, of the District of New York, have deposited in this office the title of a Book, the right whereof they claim as Authors and Proprietors, in the words following—to wit: "A System of Universal Geography, on the principles of Comparison and Classification:—By William Channing Woodbridge. Illustrated with maps and engravings; and accompanied by an Atlas." In conformity to the Act of the Congress of the United States, entitled "An act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the Authors and Proprietors of such copies during the times therein mentioned." And also to an act, entitled, "An act, supplementary to an act, entitled, an act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the Authors and Proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving and etching historical and other prints."

CHAS. A. INGERSOLL,
Clerk of the District of Connecticut.

A true copy of Record, examined and sealed by me,

CHAS. A. INGERSOLL,
Clerk of the District of Connecticut

INDEX TO THE ENGRAVINGS.

	Page
United States Capitol	Preceding the Frontispiece.
President's House	
United States Bank	
Boston Market and Faneuil Hall	
Wharf of a Commercial City	
Baltimore Exchange and Washington Monument	
Charleston Exchange	
U. States B. Bank, Savannah	
Arcade, Providence	
St. Petersburg	
Dublin	
Constantinople	
Comparative View of Mountains (Frontispiece.)	
The Solar System	2
Comparative size and appearance of the planets	3
Effects of the sun's rays	5
The Seasons	6
Points of the Compass	8
Strata of the Earth	20
Section of the Earth	20
Salt Hills of Cardona	25
Sand-Storm	29
Chimborazo	33
Mount St. Elias	34
City of Lima, and the Andes	
Travelling in Peru	
Rio Janeiro—Bridges in Chili	35
Cattskill Mountain House	
Giants' Causeway	37
Mount Etna	42
Crater of Etna	45
Mount Vesuvius	46
Crater of the Volcano Vesuvius	
Volcano in the Sea	
Mountains of New Grenada	47
Mount Hecla	
Effects of an Earthquake	
Grotto of Antiparos	
Sections of Rivers across their Channels	50
Lake Derwentwater	57
Lake George——Bellows Falls	60
Falls of Niagara——Passaic Falls	61
Horse-Shoe Fall of Niagara	
Locks of an English Canal	64
Sections of Canals in the U. States	66c
Section of South America	68
Section of North America	72
Geological Map of the United States	78
Section of Europe	93
Geological Map of Europe	98
Section of Asia	104
Icefields of the Frozen Ocean	117
Water Spouts	121
Line of Perpetual Snow	126
Frozen Regions	134
Termites Ant-hills	150
Diamond Washing in Brazil	155
Gold Mines of North Carolina	156
Lead Mines	
A Mine in Sweden	
Frankfort, Ky.	157
Coal Mines of Pennsylvania	
Salt Mines of Cracow	
Great Geyser of Iceland	161
Races of Men	165
Catholic Ceremonies	182
Temple of Mecca	188
Pagan Idols	190
Worship of the Grand Lama	192
Idol Worship in Tonkin	
Widow on funeral pile of her husband	
Catholic Procession	193
Catholic Mission at Monterey	
Japanese trampling on the Cross	
Harvard College——Yale College	210
Amherst College	
West Point——Virginia University	211
Kenyon College	
Houses of Australia	240
Hottentots and their Villages	
Tartar Tents and Cattle	
Tent of an Arab	241
House in Siam	
Palace of the Tuileries	
View of London	242
Edinburgh	
Venice	
View of Algiers	243
Jerusalem	
Ispahan	
Castle Garden, New York	244
Pennsylvania Capitol	
Great Square of Mexico	
Westminster Abbey	245
Palais Royal, Paris	
Berlin	
Map of England	294
Map of the German States	300

INDEX TO THE TABLES.

		Page
1.	Size, situation, and motions of the Planets	4
2.	Classification of Mountains	40
3.	Height of the principal Mountains of the world	"
4.	Classification of Rivers	54
5.	Length of the principal Rivers	55
6.	Size of the largest Lakes	60
7.	Size of the principal Canals	66c
8.	Quantity of rain in various places	125
9.	Mean annual temperature of places	133
10.	Christian denominations in Europe	187
11.	do. do in the United States	"
12.	Inhabitants of the World according to their Religion	193
13.	Tabular View of Protestant Missions	195
14.	Missionary Seminaries	"
15.	Medical Schools	212
16.	Theological Institutions of the United States	"
17.	Universities and Colleges	213
18.	Number of Students in Europe and the United States	213b
19.	Number of children at School	213c
20.	Principal Libraries of the World	214
21.	Principal Rail Roads of the United States	240
22.	Imports of the United States for 1829 and 1833, distinguishing the countries from which they were obtained	254

Tables Contained in the Atlas.

EXTENT, POPULATION, AND RESOURCES OF COUNTRIES.

23.	Extent and population of the Grand Divisions of the World ... *page*	1
24.	Countries in the order of their extent, with their population to a square mile	1
25.	Countries in the order of population	1
26.	Revenues of nations, in the order of amount	1
27.	Contributive proportion of individuals	1
28.	Military force of Nations	1
29.	Naval force	1
30.	Table of the principal Cities of the world, with their class and population	2

UNITED STATES.

31.	Population of the United States in 1830, White, Colored, and Slaves, according to age	3
32.	Population of individual states, White, Colored, Slaves, and total	3
33.	Number of inhabitants in each state, engaged in Agriculture, Commerce, and Manufactures, and representative numbers	3
34.	Population of states at different periods, with increase pr. ct.	3
35.	Increase of Free persons and Slaves	3
36.	Square miles and acres of each state	3
37.	Manufactures of each state in 1810, and valuation of houses and lands in 1815	3
38.	Rank of states in extent, population, &c.	3

Commerce.

39.	Exports of the United States in 1829, and 1833, with the countries to which they were sent	4
40.	Comparative table of Exports and Imports to various countries	4
41.	Exports of each state, domestic and foreign	4
42.	Tonnage of each state, in foreign trade, coasting trade, and fisheries	4

PREFACE

BY THE AUTHOR OF THE MODERN GEOGRAPHY.

A FAMILIAR acquaintance with Topography, or the location of places on the globe, is obviously the foundation of geographical knowledge. The maxim of Watts, in his treatise "On the Improvement of the Mind," that "The situation of the several parts of the earth is better learned by one day's conversing with a map or sea-chart, than by merely reading the description of their situation a hundred times over, in books of Geography," is now universally admitted, and is fully confirmed by the experience of teachers. This principle is adopted in the present work; and no attempt is made to weary the intelligent, or to relieve the indolent, by describing points and lines which they can discover at a glance.

Descriptive Geography has usually been left in the state which was common to every subject in the origin of knowledge—presenting a mass of insulated facts, scarcely connected by any association but that of locality. In other subjects, facts have been carefully compared, arranged in distinct classes, and traced to general principles; and thus have been reduced to the beautiful order and simplicity of science. Why should the Geographer reverse this method, and scatter the dismembered portions of his subject to the four quarters of the globe? Why especially, should those facts which have been traced with so much labor to the universal laws of nature, or the stable principles of intellectual and political philosophy, be severed from their connections, and arranged according to the limits which power or caprice has assigned to the jurisdiction of kings—limits perpetually fluctuating with the waves of conquest, and the tides of revolution? If we would save the student from confused and even erroneous conceptions, we must describe the operations of nature according to the limits she has established; and leave for separate consideration, those artificial boundaries which man has drawn, to divide regions of the same character—influenced by the same climate—and furnished with similar productions.

In preparing a work for general use, Malte Brun has adopted the plan of graphic and irregular description, which invests this subject with the charm of a book of travels. In this way, he has furnished an entertaining and instructive series of volumes for the parlor, or for the leisure hours of the advanced student. But the experienced teacher will see at once, how ill adapted to the schoolroom a work on this plan must be—loaded as it is with a crowd of circumstances and epithets, which the pupil cannot retain, and from which he knows not how to select; and without any arrange-

ment to assist his memory, or to aid him in consulting its pages. In a work designed for students, it is far better to follow the plan adopted by the Anatomist, and present first the mountains and rivers, the climates, productions and inhabitants of the earth distinctly, in the same manner that the bones and arteries, the organs and functions of the human frame are exhibited, before a region of the body, or even an entire limb, is described. All these are indeed combined in nature; but the character and movements of the whole cannot be understood, without a previous examination of its parts.

With these principles in view, the Author has endeavored to present the essential facts of Geography in the order of science, and to make the student familiar with its great outlines. The less important details which form the "filling up" of the picture, are thrown into supplementary paragraphs, and articles in a smaller type, for subsequent study. In order to complete the delineations, a series of statistical and topographical descriptions is added, in which each country forms a distinct subject of consideration, and a collection of tables, exhibiting the most important numerical statements which are well established.

But in order to form a *perfect* system of Geography, it would be necessary to present upon a map a complete sketch of a country, with its inhabitants, their institutions, employments, &c. An approximation has been attempted in the Atlas which accompanies this work. In pursuance of the principles which have been stated, the Author has devised a classification of mountains, rivers, cities, and countries, according to their size, which renders comparison easy, and diminishes the labor of recollection, in a subject proverbially difficult. By means of numbers referring to these classes, the sketch of a country on the map exhibits the comparative size, as well as situation, of the prominent objects. On the Physical Charts of the world are shown the various divisions of climate, with their productions and animals. On the Moral and Political Chart, the degree of light or shade marks the intellectual and moral state of a country; and the emblems annexed serve, like the standard of a nation, to designate its religion and government. "The faithful sight" is thus called in to aid "the less retentive ear;" and so far as the expense permitted, the same principle is pursued by inserting engravings of remarkable objects, not as mere ornaments, but as illustrations, to supply, in some degree, the defects of description.

The general approbation bestowed upon this plan, as it was partially developed in the "Rudiments of Geography," and the desire frequently expressed for a larger work on similar principles, led to the present publication. In collecting the materials, the Author resorted, not merely to the latest and most valuable publications of geographers and travellers, but to the best and most recent works on natural science. He owes particular acknowledgments to the works of Humboldt, Brogniart, Bakewell, Myer,

and Malte Brun. Many facts are brought forward which are not found in systems of Geography; and he believes, few of importance are omitted, which do not more properly belong to a geographical dictionary, or the journal of a traveller.

The Author had commenced the publication of his first work, when he learned with surprise, that a similar classification of numbers and arrangement ot subjects had been devised and used by *Mrs. Willard*, Principal of the Female Seminary at Troy, originated like his own, in the efforts to give instruction on this subject, some years before. Under these circumstances, it was thought advisable that both should unite in the publication of the system,—the Modern Geography being assigned to the Author, and the Ancient to Mrs. Willard. The Author takes pleasure in referring to the preface by Mrs. Willard, for a more full illustration of the principles of the work, and the nature of this singular coincidence.

The regular demand for six large editions of this work, the warm approbation of distinguished instructors and men of science, and the favorable results of experience, wherever it has been used within the knowledge of the Author, have confirmed his opinion in regard to the value of the plan. In preparing the second edition of the work in Paris, he was enabled to submit it to the examination, and obtain the aid, of persons of very extensive geographical knowledge. He was gratified to find the favorable opinion expressed at home, sustained by the approbation which it received, both for its plan and execution, from the Geographical Society of Paris, and from a number of gentlemen distinguished for their scientific attainments, and their efforts in the cause of education, in various countries of Europe, among whom he cannot refrain from mentioning the names of Humboldt and Fellenberg.

To Baron Humboldt, and to other distinguished members of the Geographical Society of Paris, the Author takes pleasure in acknowledging his obligations for valuable corrections and remarks. He also engaged an eminent Geographer to revise the whole with care, and to furnish him with notices of all recent discoveries; and was happy to find at the result of these examinations, comparatively few errors for correction. The subsequent editions have been revised with care; and the most recent information has been employed in correcting its statements and tables, from the Weimar Almanac, and the works of Malchus, Rudhart, Stein, Francini, Memminger, Cloet, Cannabich, Demian, Balbi, and others, as well as from the works of travellers and from public documents and geographical works in relation to our own country. In his efforts to improve this work, he has limited himself to those alterations, whose importance seemed to overbalance the inconvenience of change to instructors. Few of any extent have been necessary; and he trusts that the advantage of these will be sufficiently obvious, to render them satisfactory.

REMARKS TO INEXPERIENCED TEACHERS.

1. Let the Instructor first ascertain that a student has observed the country around him, and is familiar with the points of the compass, and the application of common geographical terms.

2. Let the student next draw simple maps, beginning with a plan of his table, or the room in which he is, proceeding to delineate successively a plan of the house, garden, neighborhood, and town, until he has represented with tolerable correctness, the relative situation and outlines of the principal objects within his view.

3. When he is prepared to understand the lines and points of a map, require him to become familiar with the definitions of Geography, and the outlines of continents and oceans, as presented by the descriptions and questions of this work (p. 10 to 19) in connection with the Atlas, and by the questions which follow the table of contents, on the Map of the World and the Grand Divisions. The questions should of course be varied and multiplied by the instructor, until each lesson is understood and remembered.

4. At first the questions may be answered with the aid of the maps, and the guidance of the instructor; but the student should endeavor as soon as possible, to fix the image of the map in his mind, and to answer from his recollection of it.

5. Nothing will assist so much in this as *drawing maps by the eye.* Let him draw on a slate the outline of one country at a time; then insert the rivers and mountains, and then the cities; first using the map, and finally drawing from memory.

6. As soon as this exercise is familiar, *let a whole class recite in this manner*, according to such directions as the following;

Draw the outlines of England. Write the names of the seas &c. around it. Draw the mountains. The River Thames, &c. Let the instructor inspect the slates. He will thus keep all employed, and ascertain the knowledge of each pupil, without mistake.

This plan has been practised with great success, in many schools. In order to remove every difficulty, the Author has published a set of *Outline and Skeleton Maps*, under the title of the "Geographical Copy Book." In these, the pupil begins by inserting only the cities on the Outline Map; he then copies the outlines on the Skeleton Map; and is thus easily led on, until he can draw the map from *memory alone.*

7. When the pupil is familiar with the great outlines of the globe, let him go on with the account of its Structure, and Physical Geography, omitting the articles in small type, or merely reading them over.

8. The Civil Geography should next be studied with care; and may be made highly improving, both to the student's mind, and his character.

9. The whole may now be reviewed, and by means of the Analysis of the Contents, the general views fixed in the mind, extending the study, if time allow it, to the articles in smaller type.

10. The student is now prepared to enter with advantage upon the account of particular countries, each of which combines some of the objects and characteristics which he has learned in connection. He should commence the study of each country by examining its Topography, with the aid of the questions on the maps. It would be useful to finish each by reviewing what has been said under the general views, with the aid of "Clarke's Topics," a pamphlet containing the references for each country, prepared expressly for this work.

The Author has thus pointed out what he deems necessary to obtain a *thorough knowledge* of Geography—and he believes it will amply repay the labor bestowed upon it. He must leave it to the Instructor to judge how much of this plan the student's capacity, and circumstances, and time will allow him to attempt.

PREFACE

BY MRS. WILLARD.*

When a system is brought before the public, professing to be new, and claiming to be considered as peculiarly useful, it is incumbent on those who introduce it, to show in what respects it is original, and why it is an improvement.

The objects to be attained in arranging the parts of any science for the use of learners, admitting the elements of that science to be first correctly ascertained, are to place them in that order which shall be most advantageous to the pupil in three respects; first, facility of acquirement; secondly, durability of impression; and thirdly, discipline of the mind. An attempt has been made to keep these objects steadily in view, and to discard all others as foreign to the purpose, and calculated rather to perplex than to enlighten the student; and it is not known to us, that any preceding writer has, with respect to the subjects of this work, done the same. The traveller who wishes to trace out the course he is to pursue, or to gain at one view a description of the country to which he is journeying, will not find this book and atlas so well fitted to his purpose as many others. No facts or modes of arrangement, however desirable to him, are here admitted, if detrimental to the work as to its sole object, the improvement of those who wish to learn the science.

With regard to the facility with which geography may be acquired, this plan includes the system of teaching from maps, formed upon the principle of making the eye the medium of conveying instruction; and it contains some new modifications of this principle, for which the public are indebted solely to Mr. Woodbridge. Such is the chart, from which the pupil learns the government, religion, and comparative civilization of countries, at the

---

* This is the same preface, with a few trifling alterations, which was published in 1821, in the first edition of the Rudiments of Geography. Mrs. Willard having devised, and for a number of years taught, a system of geography in all essential points agreeing with the one contained in that work, but more fully developed in this, then felt and still feels bound to make some explanation of the views with which she originated the system, and also to give to her friends her reasons for relinquishing her own right to publish it, although she had repeatedly promised them that she would, and had in a measure prepared to fulfil her engagement. This preface contains those explanations, made at a time when the subjects were more fresh in her mind than they now are. Subsequently to the printing of the preface, it was determined that the Ancient Geography should not be appended to the "Rudiments," but reserved as more suitable, both from the subject, and from the manner in which Mrs. Willard had treated it for a work to be used by more advanced pupils; and such a work the authors agreed at that time to publish. This preface has been withdrawn from later editions of the "Rudiments." Mrs. Willard prefers that her friends should consider this, rather than that, the work which she offers them, to redeem the pledge she had given them to publish her own. Fully to redeem it, she is bound to give them at least as good a work as she could have produced herself; and the more it exceeds that measure the better.

same time that he is fixing in his mind their shape and relative position; and such is the chart of climates and productions

The principle of teaching by the eye, has also a place in the classification of such objects as are compared by means of numbers. For example, after the pupil has learned the tables of population, he will in many instances forget the exact class to which a city belongs: but he will retain in his mind a picture of the page containing his table, and he will recollect whether the city whose rank he wishes to remember, was near the beginning, about the middle, or at the close of his catalogue, and thus he will know whether it is of a large, a middling, or a small size. In entering so systematically into the formation of tables of this kind, the work here offered to the public, differs, it is believed, from all preceding publications on the study of geography. The arrangement relieves the memory from a fruitless burden, by substituting few numbers for many, and perhaps it is not asserting too much to say, that some such mode of classification is not merely the easiest and the best, but that it is in fact, the only method of conveying instruction to the youthful mind, on subjects where numbers are the medium of comparison. A person who knows by rote merely, that a city contains a certain number of inhabitants, cannot from that circumstance be said to understand its rank; that is, he does not know whether it is a great or a small city, for all ideas of great and small are relative, and are obtained by comparing things with others of their own kind.

With regard to durability of impression, we discard that method of arrangement generally found in the description of countries, where many distinct and dissimilar subjects are treated of in quick succession; because, from the want of any associating principle, information received in this way cannot be well remembered. We admit little which may not be traced to one of these two laws of intellect;—first, that the objects of sight more readily become the subjects of conception and memory, than those of the other senses; and secondly, that the best of all methods to abridge the labor of the mind, and to enable the memory to lay up the most in the smallest compass, is to class particulars under general heads.

That this method of teaching geography is a judicious application of these principles, has become completely evident to me from observing the fact, that, of all the branches of study which my pupils learn, geography taught in this manner is that which they most easily call to recollection; and this is the case, whether the examination takes place after the lapse of a few months, or a few years.

But in none of the objects of education do I conceive that this system is so peculiar, as in that which relates to the discipline of the mind; and none are, in my opinion, of so much importance. Although it is of consequence to teach the student what to think, yet it is more important to teach him how to think. However well it may be for a man to have a good knowledge of geography, yet, it is still better for him to possess a sound judgment and a well regulated intellect. "The correctness of every process of judgment and reasoning, depends either immediately or ultimately on the accuracy of our comparisons." * Capacity of mind is acquired by those habits of study, which cultivate the powers of abstraction and generalization. The study of geography has heretofore been regarded as a mere exercise of the memory; but taught in this manner, it brings into action the powers of comparing and abstracting, thus laying the foundation, not only of good scholarship in the science of which it treats, but of a sound judgment and an enlarged understanding.

I have now endeavored to give some of the reasons for considering this method as an improvement; and also to show that it is in several respects

* Hedge's Logic.

original. Yet perhaps the very circumstance that it is new, may form a ground of objection. It may be said that however plausible a system appears in theory, it is often found in practice to be attended with inconveniences which were not anticipated, and could not be foreseen. But notwithstanding this system has never before been published, yet it has been brought to the full test of experiment. It is nearly eight years since I began to teach geography in the method here recommended. Intending to publish my plan of instruction, I carefully watched its operation on the minds of my pupils, while at the same time, I studied in reference to it, the most approved systems of the philosophy of the mind, and my success in teaching it far surpassed my expectations.

It may seem singular, that I should here allude more particularly to the modern geography than to the ancient, as that alone bears my name. The arrangement entered into between Mr. Woodbridge and myself, was predicated solely on my having compiled and taught a system of modern geography similar to his: whereas my writing the ancient, was merely an accidental consequence of my becoming a partner in the concern. In applying my mind to the subject, many ideas, new to me, occurred, as to the difference of the studies of modern and ancient geography, the difficulties attending the latter, and the methods of surmounting them. In finding these methods, I have been guided by the general views just explained, concerning the proper objects of books for instruction.

I could wish those of my friends to whom I have heretofore explained the principles of my method of arranging the study of geography, and the means by which I was led to this arrangement, to read with attention, Mr. Woodbridge's preface.* They will be no less astonished at the coincidence of our views in originating this system, than were those of our friends who witnessed our first conversations, and in fact, than we were ourselves. They will however perceive, that our agreeing in so many points in the execution of our plans, was by no means the effect of chance; but naturally arose from our setting out with the same end in view, and agreeing in opinion as to the means most proper for its attainment. The end proposed, was to find that method of teaching this science, the most easily learned, the longest remembered, and which in studying would afford the most profitable discipline to the mind. In our opinion, the means proper to attain this end, was carefully and patiently to scrutinize our own minds, as to the effect of methods of teaching this science, which in the course of our education had been adopted with us. It is true that each individual intellect possesses, not only those principles which are common to every human mind, but some modifications of them peculiar to itself; and a person forming a system wholly by consulting the operations of his own mind, might adapt it to these peculiarities, rather than to the general laws which regulate the intellectual powers of man. But in the present instance, the fact is before us, that two persons proceeding upon the evidence of consciousness have without any concert whatever, formed a system in all material points alike. Now if we have calculated upon those principles of our own minds which are common to all others, it is not surprising that in a hundred particulars we have brought out the same result. But if we have each mistaken our own peculiarities for the general laws of mind, our finding so many points of agreement in the execution of our plans is wonderful: for the whole number of the possible peculiarities of the human mind is incalculably great. If this reasoning is not fallacious, it cannot but go far to establish the correctness of the system, which we here unitedly present to the public.

* The preface here alluded to was that published in the first edition of the Rudiments.

May I be excused for offering in this place a few remarks in reference to those friends, to whom I have repeatedly pledged myself to publish my method of teaching geography: and who know that I have been for years collecting and arranging materials for this purpose. It would not be surprising, if they should consider me unwise in thus relinquishing the labor of years. But let them consider on the other hand, that Mr. Woodbridge has also relinquished part of a copyright obtained solely by his own invention and industry.

It is true I have pledged myself, to give to my friends my method of teaching geography; I offer them this book to redeem that pledge. If they have all that is valuable in my plan, it matters not from whose hand they receive it; and in this book they will find all its essential parts, with important additions.

If Mr. Woodbridge and myself had without knowing each other's systems, each published our own, according to our separate intention, it would have been right that both of us should have made the most of our labors; but it may easily be seen that this would have been productive of vexation to ourselves, and, on the supposition of our having made an improvement, unfortunate for the public. But having met and discovered the coincidence of our plans, how much better is it to incorporate them together: thus uniting in one system the peculiar excellences of each, and forbearing to wound the cause of education, to which, in ways somewhat peculiar, our labors have been hitherto devoted.

ANALYSIS OF THE CONTENTS;

DESIGNED TO AID IN STUDY AND EXAMINATION.

NOTE.—This analysis is intended as a substitute for questions; comprising all that is necessary for the study and examination of advanced students, without the repetition and tediousness of formal interrogation. At the same time that it serves as a table of contents to the work, it is easy to convert it into questions for examination, by the addition of any appropriate word or words which the instructor may prefer; such as —What is (Geography?) What can you say of the (fixed stars?) Describe the (rotation of the earth and its effects.) Which are the (hottest parts of the earth?) Give an account of the (seasons from March to September?) (How) is longitude (reckoned)?

MATHEMATICAL GEOGRAPHY.

GEOGRAPHY.
Mathematical Geography ¶ 1
Physical Geography 2
Civil 3—Statistical 4
Appearance and form of the Earth 5
—how nearly spherical 6
Fixed Stars—number visible—supposed use 7
Planets 8—the Earth 9
Primary Planets 10
Revolution of the Earth 11
—rotation—its effects 12
Motions of other planets —Table 13

MATHEMATICAL DIVISIONS OF THE EARTH, p. 4.
Circles ¶ 14
Great Circles 15
—how divided 16
Length of a degree 17
Poles 18—Equator 19
Ecliptic 20—Tropics 21
Polar Circles 22
Latitude 23
Parallels of Latitude 24
Effects of Latitude 25
Hottest parts of the earth 26
Torrid Zone 27
Frigid Zones 28
Temperate Zones 29

SEASONS, DAYS, & NIGHTS —p. 6.
Cause of seasons ¶ 30
—from March to Sept. 31
—from Sept to March 32
Variety of days & nights 33
Length of days and nights
—at the Equator 34
—in other parts of the w'ld 35
—from March to Sept. 36
—from Sept. to March 37
—between the Equator & the Polar Circles 38
—from P. Circles to Poles 39
—in the opposite Hemisphere 40

LONGITUDE & DIFFERENCE OF TIME—p. 7.
Meridian ¶ 42
Sun's apparent motion 43
Comparative time in places east of us—on the same meridian— 44
—on the opposite side of the earth 44
Longitude 45
—how reckoned 46
Degrees of long. to one hour's difference of time 47

EXPLANATIONS, *Preparatory to the use of Maps*—p. 8.
Representation of the earth's surface ¶ 48
A map 49
A chart—Cardinal points 50
—intermediate points 51
Points of compass on the earth 52
On a map or chart 53
Course or direction 54
Parts of a country 55
Lines on maps 56
Latitude and longitude, how marked 57
Problems
—I. to find the latitude 58
—II. the longitude 59
—III. the diff. of time 60
—IV. the length of days. 61

PHYSICAL GEOGRAPHY.

NATURAL DIVISIONS THE EARTH—p 10.
General form of the earth —its surface ¶ 62
Greatest and proportional elevation of the mountains 63
Extent of water and land 64

THE LAND.
Natural Divisions, p. 11
Continents ¶ 65
Islands 66
Land in Northern Hemisphere 67
Irregularities of land 68
Coast 69
Peninsula 70—Isthmus 71
Cape 72
Definitions of Physical Geography 73
Artificial Divisions, p 12.
Grand Divisions ¶ 74
The Eastern Continent 75
The Western Continent 76
Maritime World 77
—divisions of it 78
Arctic Regions 79
Political Divisions 80
Europe
—Russian Empire, and Northern Europe 81
—South of Europe 82
—Middle Europe 83
—Western Coast 84
—Exercises on the Maps 85
Asia
—Northern section S'th'n 86
—Middle Section 87
—questions on the Maps.
Africa 88
—Northern Africa 89
—Central 90—Eastern 91
—Western 92—Southern 93
America, divisions 94
N. Am. Northern section 95
—Middle 96—Southern 97
South America—Northern 98
—Eastern, West'n, Sth'n 99
Oceanica—extent, population, inhabitants 100

GENERAL REMARKS, p. 16.
Direction of Continents ¶ 101
—greatest length of each 102
—outlines 103
—principal projections 104
—example of uniformity in the outlines 105
—terminations of both 106

THE SEA, p. 16.
Principal Divisions ¶ 107
The Northern Ocean 108
Southern Ocean 109
Pacific 110—Indian 111
Atlantic 112—A sea 113
A strait 114
A Channel—a sound 115
Gulf or bay 116
A harbor—a road 117
Questions on the Oceans and their branches p. 18

SURFACE OF THE LAND, p. 18.
Two general divisions—highlands, lowlands ¶ 118
Mountains 119
Volcanoes 120
Plains, table-land 121
Deserts 122—A lake 123
A river 124
—source, mouth, friths 125
A vale 126—A basin 127
A declivity 128
Face of a country 129
Descent of rivers 130

STRUCTURE OF THE EARTH, p. 20.
Solid parts of the earth ¶ 132
Geology—its importance 133
Depth of mines, Minerals found in them 134
Composition of the body of the earth 135
Direction of the strata 136
Clefts—chasms & caves 137
Beds and veins 138
Rocks near the surface 139
—at the greatest depth 140
—rocks between these 141
—strata above the rocks 142
—gen'l. arrangement 143
Direction of the strata—
—Primary 144—Transition 145
—Second'y 146—Alluvial 147
Volcanic Rocks 148
Trap Rocks 149
Mode of classing rocks 150
—of naming a country 151
Composition of rocks 152
Primary rocks 153
—how distinguished 154
Granite, gneiss and mica slate 155
Extent of granitic rocks 156
Uses of primary rocks 157
Surface of primary countries: Mts. of granite 158
—of gneiss & mica slate 159
—soil 160—rivers 161
—shores 162—water & air 163
—minerals 164
Transition rocks 165
Transition countries 166
—their rivers 167
—soil 168—water 169
—minerals 170
Secondary rocks 171
Secondary countries—elevations & declivities 172
—effects on the soil 173
—rivers 174—coast 175
—general soil 176
Sand stone, salt rocks 177
—minerals contained 178
Salt hills of Cardona "
Springs of secondary countries 179
Upper strata of the earth 180
Change of rocks, sudden 181
—gradual 182
Effects of water 183–4
Evidence of these facts 185
Extensive alluvial strata 186
Rocks formed from them 187
Surface of alluvial countries 188
—rivers—harbors 189
—coasts 190
—fertility of the soil 191
Alluvions from primitive rocks 192
Sandy alluvions, water 193
Air from transition and secondary rocks 194
—from basaltic and volcanic rocks 195
River alluvions 196
Narrow valleys 197
Water and air of rich alluvions 198
—marshes 199
Minerals of alluvions 200
—of rich alluvions 201
—of sandy alluvions 202
Changes of alluvions 203
Motion of sands 204

PLAINS AND DESERTS —p. 29.
Plains and steppes ¶ 205
—their produce 206
Prairies or savannahs 207
Llanos or Pampas 208
—in Venezuela & Buenos Ayres 209
—in Hungary 210
Pine barrens 211
Ohio barrens 212
Peat Moors 213
Deserts and oases 214
—in Africa and Asia 215
—their appearance 216
—motion of the sands 217
Mirage 218
Desert of Cobi 219
Steppes of Russia & Sib. 220
—of the Caspian 221
Desert of N. America 222–3
—of South America 224

MOUNTAINS—p. 33.
Insulated mountains ¶ 225
Groups and chains 226
Length of chains 227
Chains around the Pacific Ocean 229
—South Atlantic 230
—North Atlantic 231
Alluvial tracts 232
Declivities 233
Table-lands 234–5
Valleys 236
—their form in low reg'ns 237
—in elevated regions 238
Passes or defiles 239
Names given 240
Quebradas 241
Passes for rivers 242
Origin of valleys &c. 243
Natural Bridges 244
—in Virginia 245
—at Icononzo, 246
Pierced mountains 247
Forms of Mountains 248
—of volcanic peaks 249
—of Mts of granite 250
—of stratified rocks 251
—of limestone 252
—of sandstone 253
—of trap rocks 254
Giant's causeway 255
Hebrides, other examp's. 256
Height of trap rocks 257
Effect of elevation
—on the air 258
—on Travellers 258–9
—on temperature & vegetables 260
—in table-lands 261
Height of human habitations 262
Glaciers 263
—their appearance 264
—where found 265
Avalanches 266
Uses of Mountains 267–8
Classification of Mts. 269
Table of their height 270

ISLANDS—p. 41.
Character of islands ¶ 271
Situation & appearance 272
Small and large islands 273
Structure of islands 274
Volcanic islands 275
Coral reefs & islands 276–7
—effects on harbors 278

VOLCANOES—p. 42.
Character of volcanoes ¶ 279
—their eruptions 280
—how frequent 281
Number of volcanoes 282
Range in America 283
—in Asia 284
—from the Indian Ocean to Europe 285
Volcanic islands in the Atlantic 286

(II.)
Signs and description of an eruption 287
Streams of lava 288
Ashes 289
Herculaneum & Pompeii 290
Eruptions of water and mud 291
Mud Volcanoes 292
Most frequent eruptions 293
Extinct Volcanoes 294
Craters 295
Tracts near a volcano 296
Violent effects of volcs. 297
Sub-marine volcanoes 298–9

(II.) EARTHQUAKES—p. 46.
Signs of an earthquake 301
—effects 302–3
—changes produced 304
—most dreadful earthqu. 305
—earthquakes of 1755, 306
The most recent 307
Earthquakes of 1811-12 308
—in Venezuela 309
—in the United States 310
Where most frequent 311
—their origin 312–13

(II.) Caves—p. 47.
Naked cavities ¶ 315
Fingal's Cave 316
Caves in Iceland—Volcanic caves—vapors 317–8
—in S. America 319
—near Rome, &c. 320
Ice caves 321
Caves where frequent,
—their appearance 322–4
Grotto of Antiparos 325
Peak Cavern 326
St. Michael's Cave 327
Caves containing bones 328
Stalactic Caves in U. S. Wier's Cave, &c. 329–30
Saline Caves 331
—at Corydon, Indiana, 332
Nitre Caves 333
Blowing Caves 334
Grotto del Cane 335

Rivers—p. 50.
Origin of Rivers, size ¶ 336
Connection of sources 337
—of their basons 338
Streams liable to dry up 339
Current of rivers 340
—their course 341
Rivers of primary and transition countries, course and character 342
—mouths—use 343
—of second'y & alluvial 344
—their banks 345
—marshes and water 346
—mouths 347—Deltas 348
—passage through Mts. 349
—their deposites 350
Rivers disappearing 351
—lost entirely 352
High & low water, floods 353
Daily floods 354
Annual floods 355
—most remarkable 356
—their height 357
—their effects 358
Rivers meeting the ocean; their force 359
—their level 360
Effects of opposing tides 361
Classes of rivers 362
Rivers of America; Mississippi, Amazon 363
—St. Lawrence, Orinoco 364
—of Asia; Kiang Ku 365
—Ganges 366
—of Africa; Nile, Niger 367
—of Europe 368
Table of Rivers Quest. 369

Lakes—p. 57.
Lakes 370
—origin and discharge 371
Periodical lakes 372
—with no visible outlet 373
Salt lakes, where most abundant 374
Natron lakes 375
Tincal lake of Thibet 376
Level of lakes 377
Storms 378
Agitations 379
Floating islands in lakes 380
Scenery 381
—in primary regions 382
—in secondary 383
—in alluvions 384
—examples 385
Lakes of America 386
Caspian Sea 387
Lake Baikal 388
Lakes of Europe 389
—of Africa 390
Table of lakes 391
Questions on the table—How much longer and broader is the Caspian than Lake Superior?—How many lakes of the Eastern Continent are larger than Ontario?—How many larger than Champlain?—How many in Europe, larger than Cayuga Lake?

Falls and Cataracts—p. 61.
Different classes of falls ¶ 392
—in different geological formations 393
—their use 394
—their appearance 395
Falls of Niagara 396
—their division 397
—their effects 398
General features of other cataracts 399
Falls of R. Montmorency and Chaudiere 400
—Mississippi 401
—Missouri 402
—Passaic 403
—Mohawk 404
—Catawba 405
—Tockoa Creek 406
—Connecticut & Hudson 407
—highest in America 408
Cataracts of the Nile 409
—of primary regions in Europe 410
—most considerable 411
Cataracts of the Alps 412
—of Terni 413
—of Tivoli 414

Canals—p. 64.
Canals ¶ 415
—mode of constructing on level ground 416
—on irregular ground 417
Tunnels 418
Canals of China 419
Locks 420
—mode of passing 421
Design and use of canals 422
Imperial Canal of China 423
Longest in Europe 424
Other canals of France 425
—of Kiel 426
—of Middle Europe 427
—of England 428–9
—of Scotland 430
—of Ireland 431
—Middlesex, U. S. 432
—in the Carolinas 433
—in New York 434
Grand Western Canal 435
Others in the U. States 436
Table of Canals 437
Mention from this table, the longest canal in the world—the second—three next in length—the broadest and deepest—the second in this respect—that which rises highest—the three next in elevation

Grand Divisions of the World—p. 67.
Natural divisions of the continents; peculiarities of each continent ¶ 438

South America—p. 68.
Mountains.
Surface ¶ 439
The Andes 440
—northern branch 441
—middle 442—Southern 443
—aspect and character 444
—principal ridge 445
Physical Divisions—p. 69.
Western declivity ¶ 446
Basin of the Amazon 447
—of the Orinoco 448
—of the Paraguay 449
Table-land of Chiquitos 450
—its valleys and plains 451
—its eastern declivity & the Brazilian Andes 452
Inland Navigation—p. 71
Western Declivity ¶ 453
R. Magdalena & Cauca 454
Basin of the Orinoco 455
—of the Amazon 456
—of the La Plata 457

North America—p. 72.
Its connection with S. America—with Asia ¶ 458
Mountains.
General Character of N. America 459
Great Western chain 460
—its height and breadth 461
—branch to the N. E. 462
—range on the Pacific O. 463
Mts. E. of Mississippi 464
Allegany Ridge 465
—branches on the West 466
—Blue Ridge 467
—connection with Green and White Mountains 468
—ridges in Va. & Penn. 469
Breadth & height of Appalachian chain 470
—aspect 471
White Mountains 472
Mts. of primary region of the United States 473
Taghonnuc range 474
—its highest points 475
White Mountain range 476
Mts. in New Hampshire 477—Maine 478

Physical Divisions of N. America, p. 77, ¶ 479
Western declivity 480
Northern declivity 481
Atlantic declivity 482
—its alluvion 483
—its shore and elevation 484
—character N.& S. of the R. Rappahannock 485
—in states S.of Maryland 486
Primitive of the U S., 487
—boundary on the west 488
—boundary on the east 489
Transition formation 490
Second'y region of U. S. 491
Mts. in the Miss. basin 492
Character of the basin 493
—the delta 494
—Middle section 495
—N'th'n section, divis. 496
—hilly country 497
—undulating coun. surface 498—defects 499
—valley country ; soil & climate 500
Country between the R. Missies & Missouri, 501
—South of the Missouri 502
—West of longitude 96° ; surface and aspect 503
—soil and character 504
Basin of St. Lawrence 505
Basin of Columbia R. 506
Inland Navigation, p. 85.
Navigation of the Mississippi and its branches 507
—their current, obstructions in the Mississippi 508
—Missouri 509—Ohio 510
—Arkansaw 511-Red R. 512
—branches of the Miss. 513
—St. Lawrence 514
Route of the fur traders 515
Lake Champlain ; River St. Francis 516
Rivers of the Atlantic declivity and their tide waters 517—their falls 518
Rivers of Geo. & S. C. 519
—of N. Carolina 520
Chesapeake Bay 521
James R. ; Potomac 522-3
Susquehannah 524
Delaware Bay & River 525
Rivers of N. Jersey 526
Hudson River 527
Rivers E. of the Hudson 528
Connecticut River 529
Narraganset Bay 530
Merrimack River 531
Rivers of Maine 539
Connection of basins of St. Lawrence & Missi. 534
—of the St. Lawrence & Atlantic declivity 535
—of the Mississippi and Atlantic declivity 536
Inland navigation along the coast ; from New-Hampshire to Virginia 537
—Virginia to Georgia 538
Naviga. of Columbia R. 539

Arctic Regions—p. 92.
Boundaries ¶ 540
Aspect and rivers 541
Antarctic Regions—
Situation and aspect 542
Europe—p. 93.
General aspect ¶ 543
Mountains.
Two principal highlands 544
Alps ; extent and aspect 545
Lower parts ; middle regions ; upper divisions ; elevated valleys 546
Mt. Jura 547
Pyrenees ; their extent 548
—structure and aspect 549
Carpathian Mts. 550
Chain of Mt. Hoemus 551
Appennines 552
Surface of Italy ; other mountains 553
Mountains of Spain 554
Scandinavian High'nds ; principal chain ; extent, 555
—character 555
—their branches 556
Ural Mountains ; extent, height ; aspect, character 557
Physical Divisions p. 97.
Surface of Europe Scandinavian Highlands ¶558
Alpine Highlands 559
Great lowland of Europe 560
Northern part of Ger'my 561
Denmark, Netherlands, Prussia, Pol'd, Russia 562
Course of rivers, grand declivities of Europe 563
Northern declivity ; situation, divisions 564
Southern do. divisions 565
Inland Navigation p. 99 566
R. Volga, and its canals 567
R. Dnieper 568—R. Don 569
R. Rhine 570—Of Holland 571
Belgium 572
France, rivers 573—canals 574
Spain 575
R. Danube 576
N. Germany, Prussia, & Poland 577
R. Ems, Weser, Elbe 578
R. Oder 579—Vistula 580
Canals uniting these rivers 581—Italy 582
Sweden, Norway, Finland 583
R. Gotha, L. Wenner &c. 584
Denmark 585
G. Britain 586
R. Thames ; canals 587
Scotland 588
Caledonian canal, &c. 589
Ireland ; R. Shannon & canals 590—R. Barrow 591
Navigation, from the Baltic to other seas 592
Medit. Sea to N. Europe 593
Atlantic O. across Great Britain to Stockholm 594

Asia—page 104.
Most striking features ¶595
Mountains.
Principal chain 596
Rivers flowing from it 597
Branch of Altaian Mt's. 598
Himmaleh Mountains 599
Deciliv. aspect, height, 600
Chains of Hindoo Coosh Paropamisus, Belur T. 601
Caucasus, its aspect 602
Taurus 603
Libanus and Antilibanus 604
Zagre 605—Ararat 606
Ida, Olympus 607
The Gauts 608
Ceylon, other Asiatic Is. 609
Physical Divisions p. 106.
Great table-land of Asia ¶610
Northern declivity 611
Eastern declivity 612
Southern declivity 613
S. Western declivity 614
Inland Navigation—p. 109
Northern deciliv. of Asia ¶615
China 616
Hindoostan & Chin Ind. 617
R. Indus & its branches 618
R. Ganges 619-S.of India 620
Eastern coast 621
Western part of Persia 622
Southern part, East Persia and Arabia 623
Africa—p. 111.
General aspect ¶624
Mountains, Mt. Atlas 625
—aspect and branches 626
Mts. of Central Africa 627
—structure ; streams 628
—of Red Sea, Abyssinia 629
—appearance, height, structure 630
Mountains of Lupata 631
—of S. Africa 632
—on the coast of At. O. 633
—of Madagascar 634
Physical Divisions, p. 114
Declivities of Africa ¶635
Deserts 636
Vales of Niger & Nile 637
Central Africa 638
South Africa 639
Inland Navigation, p. 115.
General character of Africa—Western coast ¶640
R. Nile 641
Canal of Alexandria ; canal of the Red Sea 642
Oceanica—p. 115.
Islands of the Pacific O. their divisions ¶643
—their structure 644
Australia N. Holland 645
—Van Diemen's Land 646
—New-Guinea, N. Zealand, New Caledonia, the New-Hebrides 647
Polynesia—Pelew, Ladrone, and Caroline Isles : Sandwich Isles 648
—Friendly & Society Is. 649

THE OCEAN—p. 117.
Level of the ocean; of seas open to the east ¶ 650
—depth 651—Saltness 652
—color 653
—luminous appearance 654
—aspect around Poles 655
Boundaries of the Ice in the Northern Hemis. 656
—in the Southern 657
Floating ice fields & isl. 658
Waves of the sea 659
Tides 660—their causes 661
—their height 662
Inland seas and lakes 663
—their motion 664
Currents; two kinds 665
—the most extensive, its motion in the Pacific 666
—in the Atlantic 667
The Gulf Stream 668
Northern polar current 669
Southern do. 670
Smaller currents 671
Whirlpools; Maelstrom, Charybdis 672
—Hurigate 673
Circulation of water in the ocean; its effects on temperature 674
—change at 40° & effect 675
Uses of the ocean 676

THE ATMOSPHERE.
WINDS—p. 121.
Causes of wind ¶677
Various kinds of wind 678
Trade winds 679
—their extent 680
Monsoons 681
Land and sea breezes 682
Hurricanes; Velocity & uses of wind 683
Whirlwinds, effects in deserts, on the ocean 684
Pestilential winds Simoom &c. Sirocco 685–6
Calms near Cape Verd 687

RAIN—p. 123.
Evaporation, fogs, clouds 688
Rain, snow, and hail 689
Height of vapors and clouds 690
Quantity of rain 691
—in the Torrid Zone (number of rainy days) 692
—the rainy season 693
Thunder storms 694
Countries nearly destitute of rain 695
Table of the quantity of rain; average in different latitudes 696

TEMPERATURE—p. 126.
Measure of temperat. ¶697
Sensations in different latitudes 698
Time of greatest heat & cold, in the year & day 699
Mean annual temperature 700
Internal heat of the earth 701

Causes of temperature, p. 127.
Chief source of heat; effects of the sun in different latitudes ¶702
—on different declivities 703
—on the land generally 704
Greatest heat, where produced; change in going upward 705
Line of perpetual congelation 706
Effects of sun's rays on the ocean 707
—its temperature 708
—of vapors on temperature;—of moisture on climate 709
Temperature near the sea 710
—of moist and marshy countries 711
—of open grounds & forests, summer, winter 712
Effects of countries on each other, 713
Climate of countries open to winds; of those sheltered 714
Effects of different winds 715
Climate of Siberia N. Am. & Europe; Eastern coasts of continents 716
Temperature of seasons 717
Difference of seasons; in maritime regions; E. coast of Asia and N. America 718
Change of seasons; where most sudden, where most gradual 719
Classes of climates 720

Isothermal lines, p. 131.
Mode of tracing; direction in the Torrid Zone; Temp & Frigid Zones 721
Isothermal line of 78° 722
—of 68° in America; Europe; Asia 723
Line of 59° 724
Line of 50° in Europe; in N. America 725
—of 41° in N. Europe & Asia; in N. America 726
—of 32° 727
Table of mean temperature of places p 133
Questions on the table. What is the difference of temperature in different portions of the world, in latitude 23°?—in lat. 41°?—in lat. 44°?—in lat. 48°?—in lat. 56°?

REGIONS & CLIMATES, p 134.
Regions of climate ¶ 729
Equatorial Region;
Situation; temperature 730
Dry and stony parts of it 731
Well watered countries; their diseases 732

Elevated tracts & islands;
Climate 733
Declivities and table lands of the Andes 734
—districts below these 735
—districts above them 736
Islands of Torrid Zone; climate of the West Indies; Is. of Pacific O. 737
Tropical & Warm Regions, —p. 137.
Their limits 738
—temperature 739
Warm R. limits climate 740
Countries, E. Continent; their climate 741
Resemblances in the climates of the Hot and Warm Regions 742
Peculiarity of Egypt & Western S. America 743
Salubrity of Hot & Warm Regions 744
S'thn parts of N. America 745
Influence of soils and elevations, in Hot and Warm Regions; on the Mediterranean 746
—in Mexico & S. Amer. 747
—in the Southern U. S. 748
—in S. Africa & N. Hol'd 749
Temperate Regions, p. 140.
Limits, climate ¶750
—on the cont. of Europe, climate; Switzerland 751
Maritime districts, [illegible]
—their moisture, effects [illegible] on vegetation 753
Limits and character of the Temp. Region in N. America 754
—E. coast of Asia 755
—in U. S. on Atlantic 756
—west of the Alleganies 757
—basin of Columbia R. 758
Cold Region, p. 142.
Its limits ¶ 759–Climate 760
Vegetation 761
Islands and coasts 762
Climate in the Southern hemis.; snow & ice 763
Temp. of the winters 764
Frozen Regions, p. 144.
Limits and climate; seasons within Pol. cir. ¶665
Effects of cold in Greenland, Lapland &c 766
Change of Seasons, temperature of summer 767
Coasts and Islands 768
Polar Regions, p. 145.
Temp. and description ¶769

PRODUCTIONS OF THE EARTH
VEGETABLES—p. 146.
Variety of classes ¶ 770
Number of species kno'n 771
Utility of vegetables 772
Peculiar vegetables of each grand division 773
Geographical limits; where most extensive 774

Plants confined to their native soil; scattered 775
How limits of plants are to be ascertained 776

Polar Frozen, & Cold Regions; p. 147.

Plants of Frigid Zone; growth and produce ¶ 777
Change in plants from polar circles to pole 778
Forests and plants of Frozen Region; grains 779
Cold Region; grain fruits; vegetables; forests 780

Temperate & Warm Regions, p. 148.

General products 781
Fruits of Temp. Regions grain; aud grass —782
Fruits of Warm Regions; aspect of vegetation 783

Tropical and Equatorial Regions, p. 149.

Productions of Tropical Regions ¶784
Dry regions, Torrid Zone; moist regions 785
Plants and forests 786
Size of trees; palms 787
Bread fruit, plantain gum forests; valuable woods 788
Fruits, spices, gums 789
Grains cultivated, and substitutes for grain 790
Elevated regions 791

ANIMALS—p. 150.

Variety and uses ¶792
—domestic animals 793
Distribution of animals 794
—of the dog; swine, &c. 795
—common wild animals 796
—of fish and birds 797

Torrid Zone, p. 151.

Character of animals ¶798
Rhinoceros, b'sts of prey 799
Reptiles 800
Bats and insects 801
Small insects and locusts 802
Quadrupeds 803—Birds 804
Monkeys 805
Fish—Marine animals 806
Beasts of burden in moist and dry countries 807
—in S. America; Buffalo; animals used for food 806

Warm, Temperate, & cold Regions, p. 153.

Number, size & ferocity of quadrupeds ¶809
Reptiles; insects; birds 810
Useful animals; furred animals 811
Situation and species of the horse 812—the ox 813
—the ass and mule 814
—the Bactrian camel 815

Frozen Regions, p 154.

Land animals ¶816
Marine animals; birds 817
Beasts of burden 818

Varieties in animals, p 154.

Difference from lat. ¶819
Diff. species of contin'ts 820
Varieties in the same species; the goat; the seal; the elephant; the swine; other domestic animals; varieties most numerous 821

MINERALS—p. 155.

Distribution ¶ 822
Metals, how found 823
Digging mines 824
Minerals on the surface 825

Metals.

Gold; how obtained; mines of Europe; Africa; where most abundant; of the U. S. ¶826
Platina 827
Silver; where most abundant; mines in other countries ¶828
Iron; its distribution; most extensive mines in middle U. S.; in the Eastern States 829
Copper; pure masses; mines in U. S. Zinc 830
Lead; greatest quantities; mines of the U. S.; of Missouri; Illinois 831
Tin 832—Mercury 833
Cobalt 834—Arsenic 835
Antimony and Bismuth 836

Precious Stones, p. 158.

Sapphire & Ruby; Emerald & Beryl; Topaz; Jasper and Agate ¶837
Diamond 838

Building Stones

Limestone ¶839
Marble in Europe & Africa; in U. S.; at Milford; on Potomac R. 840
Chalk 841—Slate 842
Sandstone quarries U.S. 843

Inflammable min., p. 159.

Coal; in England & Europe generally; in America; principal mines in the U. S.; in Penn. in N. England ¶ 844
Peat or turf 845
Sulphur most abundant 846
Bitumen; varieties springs at Baku; Petroleum in Europe & Burmah; in the U. S.; Maltha; Asphaltum 847
Amber 848

Mineral Salts, p. 160.

Common Salt; the ocean; beds and mines of salt; mountains; salt plains in Africa and Asia; in America; Brine springs; do. in the U. S. ¶849
Gypsum, name; quarries in N. America 850
Ammonia, Glauber and Epsom Salts; Copperas and Alum 851
Soda 852—Nitre 853

MINERAL SPRINGS—p. 161

Intermitting springs ¶ 854
Spouting springs; Great Geyser of Iceland 855
Mineral springs; uses 856
Classes of min. springs 857
Springs of primitive regions; of secondary & alluvial 858
Warm springs; uses 859
—where most abundant 860
—of England 861
—of middle & E. Europe 862
—round the Black Sea 863
Sulphureous springs 864
Chalybeate 865
Saline; Seltzer 866
Springs in Miss. Basin; Sulphur sp. in Atl. St. 867
Warm Springs 868
Springs in Virginia 869
—at New-Lebanon 870
Chalybeate Springs 871
Ballston & Saratoga 872
Resort to Springs 873

CIVIL GEOGRAPHY.

RACES OF MEN—p. 165.

Varieties, their origin ¶874
Characteristics of the European Race 875
Nations included 876
Celtic family 877
Gothic family 878
Whites of America 879
Asiatic Race 880
Nations of this race 881
American Race 882
Malay 883—African 884
Jaloffs, Caffres, Foulahs 885
Hottentots 886
Australians 887
Intermediate races; Mestizoes & Cholos; Egyptians; Hindoos 888
Variety in individuals 889

(II.) LANGUAGES—p. 169.

Divisions of Races ¶890
Variety of languages 891
Changes in languages 892
Number estimated 893

Languages of the European race, p. 169.

Between the Ganges & the Atlantic O ¶894
Sanscrit 895—Persian 896
Aremaic 897
Malay and its dialects 898
Greek 899

Other lang. of Europe; Teutonic family; Germ. and its branches 900
Ancient Scandinavian 901
English 902
Celtic family; Gaelic; Lowland Scotch 903
Latin family & branches 904
Italian; Sicilian, &c. 905
Spanish and Portuguese 906
Romanese; French 907
Sclavonic fam. Russian 908
Hungarian; Albanian; Finnish; Basque 909
Caucasian & Georgian 910
Turco-Tartarian 911
Languages of the Asiatic race.—p. 172.
Lang. of E.Asia; Chinese, Japanese, Corean, Tibetan, Anamic, Avan, Siamese, Peguan, ¶912
Mongolian and Tungusian families of N. Asia 913
African Languages p. 172.
Number; N. Africa 914
—W. and S. Africa 915
American Lang. p.173.
Classes E. of Miss. ¶916
—W. of Miss.; Mexico 917
The Carribbee; Quichua; Araucanian 918
Character of the American Languages 919
Written Language, p. 174.
Substitutes in Savage nations; in Mexico ¶920
Chinese characters 921
Alphabetical writing; in Asia; in Europe; introduction among savages 922
CIVILIZATION—p 174.
States of Society;
Savage State ¶923
—customs 924
Barbarous State 925
Wandering tribes; settled tribes 926
Half-civilized State 927
Civilized nations; two classes 928
Enlightened nations 929
Questions on the Moral Chart of the World.—What parts of the world are savage, and what countries are included? What barbarous? What half civilized? What civilized?
GOVERNMENT—p. 176.
States; names ¶930
Powers in government 931
Assistant officers 932
Forms of government
A democracy; a republic 933
A confederation 934
Aristocracy 935
A monarchy 936
An absolute monarchy 937
A limited monarchy 938
Earliest government 939
Gov. of Chiefs, names 940
Change by conquest 941
Power of chiefs in temp. & cold countries 942
—in warmer regions 943
Gov. of Siberia & Tartary 944
—Arabia; Beloochistan; Cabul 945
Absolute mons. of Asia & Africa, of Dahomey 946
Persia and Turkey 947
Tripoli, Tunis & Egypt 948
Emperor of China; Mandarins 949
Siam, Burmah Hind. 950
Russia 951
Prussia & Denmark, Italy, & Germany 952
Spain, Portugal 953
Limited monarchies of Europe—names & constitution of assemblies 954
Government of Austria 955
Sweden 956—G. Britain 957
France & Netherlands 958
Bavaria, Hanover, Poland & Norway—Saxony 959
Republics; Switzerland; states of America; St. Marino; Ionian I. 960
Spanish Am. States; St. Domingo 961
Confederations of States Germany and Switzerland 962
Gov. of United States 963
—Legislative branch 964
—Executive 965—Judges 966
RELIGION—p. 182.
Prevailing religions, Jews ¶968
Christians: divisions 969
Eastern Church, p. 183.
Ceremonies & doctrines ¶970
Greek Church 971
Copts & Abyssinians 972
Armenians 973
Nestorians; Christians of St. Thomas 974
Bible in the E. Church 975
Roman Catholics, p. 184.
Doctrines & ceremonies, religious knowledge ¶976
Where most numerous in Europe; the U. S. 977
Protestants, p. 185.
Doctrines & Worship ¶978
Principal sects 979
In Europe; Lutherans 980
Calvinists 981
In G. Britain & U. S. 982
Episcopalians 983
Presbyterians 984
Congregationalists 985
Moravians 986—Baptists 987
Methodists 988
Friends or Quakers 989
Unitarians, Universalists 990
Tables of denominations in Europe; in the U. S. 991
Toleration; Cath. coun. 992
—Protestant countries ¶993
—in the United States 994
Mahometans—p. 188.
Doctrines and rites ¶995
Sects 996—The Seikhs 997
Characteristics of the system 998
Pagans—p. 189.
Their number 999
N. Holl'd'rs, Hottentots 1000
Systems in East'rn Asia 1001
Their sacred books 1002
Inferior Deities 1003
Guebres or Gaurs 1004
Tibet and Tartary 1005
Hindoos 1006
Boodhists; transmigration 1007
Fetichism, in Africa 1008
Evil deities & sorcery 1009
Indians of N. America 1010
Character of Pagan deities 1011
Prayers offered 1012
Ceremonies; sacrifices 1013
Penances and rites 1014
Morality of Pagans 1015
Table of religions of the inhab. of the world 1016
Christian Missions
Origin of missions ¶1017
Catholic missions; mode of conducting 1018
Effects in Africa 1019
—in South America 1020
Protestant Missions, Moravians 1021
—mode of conducting, instructions given 1022
—their success 1023–24
Table of Prot. miss. 1025
Missionary seminaries 1026
Colleges at Calcutta & Serampore 1027
LEARNING—p. 195.
Connection of learning & the state of society ¶1028
Preserving knowledge in Savage and barbarous nations 1029
—among the N. Am. Indians 1030
—among the Tartars & other barbarous tribes 1031
—their knowledge 1032
Influence of books 1033
Books of W. Asia; Hindoostan, & N. Africa 1034
—of Eastern Asia 1035
Knowledge among Half-civilized nations 1036
—in Arabia 1037–India 1038
Effects of the art of printing—of lithography 1039
Knowledge of civilized nations, modes of communicating 1040
Causes affecting the state of knowledge in civilized countries 1041

Influence of absolute governments 1042
—of free governments 1043
—of Paganism 1044
—of Mahometanism 1045
—of the R. Cath. relig. 1046
—of Protestantism 1047
Knowledge most diffused 1048
—its state in Cath. Europe & America 1049
—Italy 1050
—Poland and Austria; Catholic Germany 1051
—Russia 1052
—Protestant countries; Norway 1053
—Denmark, the Netherlands, & Sweden 1054
—Germany 1055
—G. Britain & France 1056
—U. States; means of acquiring knowledge 1057

INSTRUCTION—p. 201.
Institutions for promoting knowledge ¶1058-59
Education in U. States 1060
—in the Eastern. States 1061
Funds for Education 1062
—in the Middle States 1063
—New York 1064
Education in Penn. 1065
—in the Southern States 1066
Fund in Va.; in Geo. & S. Carolina 1067
—in the Western States 1068
Best state of education, in Europe 1069
—in Protestant Germany; Bavaria; Wurtemburg; other parts of Germany 1070
—Iceland 1071
—England—Ireland 1072-3
—in France 1074
—in East. & S. Europe 1075
—in Russia & Poland 1076
—in Spain and Portugal 1077
—Spanish & Portuguese America 1078
—among the Greeks 1079
—in Mahometan countries in Persia & Cabul 1080
—Tartars and Moors 1081
—Hindoostan 1082
—China 1083—Japan 1084
—Siam and Burmah 1085
—in Java & Asiatic I. 1086
—in Egypt 1087

LITERARY INSTITUTIONS—p 207.
Universities ¶1088
Universities of Europe 1089
—of Germany; mode of instruction & discipline; number; 1090
German Gymnasia 1091
Univ. of Norway Sweden; Denmark 1092
—of the Netherlands 1093
—of Prussia & Austria 1094
Literary institutions of Switzerland 1095
—of Russia 1096
Universities of Italy 1097
—of Spain & Portugal 1098
Institutions of Brazil & Spanish America 1099
—of France 1100
—Lycea and Schools 1101
—of Scotland; mode of instruction 1102
—of Eng.; Cambridge and Oxford 1103
Universities and Colleges of the U. States; mode of instruction 1104
In New England 1105
Maine 1106
New Hampshire 1107
Vermont 1108
Massachusetts 1109
Connecticut 1110
Rhode Island 1111
Middle States; N. Y. 1112-13
Pennsylvania 1114
New Jersey 1115
Southern States 1116
Maryland 1117
Virginia 1118
Univ. of N. Carolina 1119
—of S. Carolina 1120
—of Georgia 1121
Instl. of the W. States 1122
Miss. 1123—Tenn. 1124
Kentucky 1125-Ohio &c. 1126
Academies 1127
Institutions for the Deaf and Dumb 1128
Military Academy 1129
Literary institutions of Mahomedan countries 1130
—Arabia, Turkey and Persia 1131
—Tartary, Bucharia, & Cabul 1132
—Tibet, China & Chin India 1133
—Hindoostan 1134-35
—private endowments 1136
Institutions of Egypt 1137
Theological seminaries 1138
Table of Theol. Sem. & Medical Schools, p. 212
—of Universities and Colleges in Europe & the U. S., p. 213
Comparative number of students in Europe & the U. S., p 213(b)

LIBRARIES—p. 214.
Table of the Libraries ¶1140
Libraries of Europe 1141
—of the U. States 1142

NATIONAL CHARACTER—p. 215.
Causes affecting national character ¶1143
Characteristics of races.
European race 1144
Caucasian family 1145
Celtic family 1146
Gothic family 1147
Mongolian race; N'n. Asiatics & Esquimaux 1148
American & Malay races; N.A. Ind.; Peruvians; Mestizoes; Cholos 1149
African race; Hottentots & Papuans; Caffres 1150
Influences of Physical causes, —page 216.
Effects of warm climates ¶1151
—of temp. climates; —of the Polar climate 1152
—of fertility 1153
—of rough and barren countries; examples 1154
—of a maritime situatn. 1155
Influence of Moral causes—p. 218.
Influence of knowledge and ignorance ¶1156
—of a dense population 1157
—of a thin population 1158
—of a crowded popula. 1159
State of Society, p. 219.
Characteristics of Savages; their virtues; vices, general spirit ¶1160
—habits & disposition 1161
Peculiarities of Barbarous nations 1162
—Half-Civilized nat'ns 1163
Influence of a despotic government on the people 1164
—on moral character 1165
—of absolute mon'rch's 1166
—of limited monarchies 1167
Effects of freedom on national character 1168
Influence of Paganism 1169
—of Mahometanism 1170
—of Christianity; institutions arising from it 1171
Influence of females; their state in Mahometan & other Half-Civilized countries 1172
—in Christian nations; education in Europe 1173
—in G. Britain & the U. States; consequences 1174

AGRICULTURE—p. 224.
Among Savages; North American Indians; natives of hot countries ¶ 1175
Barbarous nations that wander 1176
—of the Torrid Zone; in Polynesia 1177
China and Japan 1178
India 1179
Countries on the Mediterranean p. 225.
Western Asia and N. Africa; Turkey & Persia; Arabia ¶ 1180

Lower Egypt 1181
The Barbary States 1182
Southern Europe; Sicily; Roman States 1183
—system of agriculture 1184
—Its products 1185
Middle Europe, p. 227.
N. Italy; Tuscany, Lombardy & Milan ¶1186
Switzerland 1187
Middle Europe 1188
Poland and Russia 1189
Prussia, Austria & Germany; tillage; prod. 1190
France 1191
Belgium 1192—Holland 1193
British Isles, p. 230.
England; tillage; prod. ¶1194
Scotland; highlands; lowlands 1195
Ireland 1196
Northern Europe, p. 231.
Frozen Regions, prod. ¶1197
Denmark 1198
Norway; Sweden; N. Russia 1199
United States, p. 232.
General state of agriculture and its causes; Agricultural regions ¶1200
Grazing region, its products Me.; N. H.; Vt. R. I.; Mass.; Conn. 1201
Wheat region, Penn. N. Y., &c., Md. & Va. states on the Ohio 1202
Products; grains, tobacco; hemp; fruits 1203
Grazing districts 1204
Cotton region; agricultural products; fruits 1205
Tropical Region; products and fruits 1206
Mexico & S. America, p. 235.
State of agric. causes ¶ 1207
Mexico prod. & tillage 1208
S. America; in the Torrid Zone; tillage 1209
Plains of Brazil & Buenos Ayres; elevated regions 1210

(II.) Roads—p. 237.
Roads among Barbarous and Savage nations ¶1211
Half civilized Asia; the South of Europe 1212
Effects of soil 1213
—of Climate; state in the Cold & Frozen Reg'ns 1214
—in the Temperate Regions; Roads of Italy & Middle Europe 1215
Passes of mountains; of the Pyrenees; of the Alps; of Mt. Simplon and Cenis 1216
Roads of G. Br.; Ireland 1217
—of newly settled countries; of S. America; passes of the Andes; of Quindiu 1218
Passes from Peru and Chili to La Plata 1219
Table land of Mexico 1220
Roads in United States 1221
—Prim. N'n. dist. Penn. 1222
—Alluvion of the coast 1223
—Western States 1224
Great post road of the U. S.; principal roads from the Atlantic to West; Rail Roads 1225
Table of do. in U. S.

(II.) Buildings & Cities, p. 240.
Buildings of wandering tribes ¶ 1226
—of savage nations; of S. Africa 1227
—of the Frozen Region; of N. Georgia 1228
—in the Torrid Zone; China and India 1229
Interior of habitations in the Frozen Regions of the poor in Asia & Europe 1230
—of civilized nations 1231
Cities of Europe; mode of building 1232
—houses; ornaments 1233
—situation of the principal; on Medit. Sea 1234
Cities of Asia; houses in Western Asia; interior structure; public and ornamental buildings 1235
Cities of Eastern Asia; of China 1236
—of Africa generally; of Northern Africa 1237
Cities of America, p. 243.
—of British America ¶1238
—of Spanish America; private houses; elevated cities; Brazil 1239
Cities of the U. States; Nthn. Sts. Western; Southern; situation of the principal 1240
Indian towns of Mexico and South America 1241

Arts & Manufactures—p. 244.
Among Savage and Barbarous nations; in civilized countries thinly settled ¶ 1242
Nations of Asia & Africa 1243
Effects of the division of labor 1244
Best Instruments 1245
Working of metals; its importance; where understood 1246
Metals from ores 1247
—in Europe; in Eng. 1248
—in Germany 1249
—in Turkey 1250
Plate and jewelry 1251
Art of weaving; where known; most perfect 1252
Best woollen cloths; of the United States 1253
Carpets, Camel's hair & Cashmere 1254
Cotton cloths; cotton manuf. of G. Britain, of Central Europe 1255
—of the U. States 1256
Linens; where best made; where else obtained 1257
Silks; embroidery and tapestry 1258
Pottery; porcelain 1259
Glass 1260

Commerce—p. 249.
Origin of Commerce ¶1261
Precious stones; where obtained; precious metals; tea; gums, &c. 1262
Com. of cold and warm countries; articles exchanged; tobacco 1263
—of countries on the Mediterranean 1264
—of manufacturing and forested countries 1265
—of grazing countries 1266
—of cold countries; fish furs 1267
—of agricul. countries 1268
—of manufac. nations 1269
Internal commerce on the East'n Continent; in America 1270
Nations passive in commerce; Savages 1271
Half civilized Asiatics 1272
Nations engaged in active commerce; carrying trade 1273
Table of imports of the U. States
Questions on the Table. How much of our imports is carried out of the country again? What are the two principal articles of import, & how large a portion do they make of the whole? What next to these? Three next? What others amount to more than two millions of dollars? What others above one million? What articles do we export again above a million in amount? What above $200,000? Whence do most of our manufactured imports come? Whence the produce of warm climates? Mention the chief articles exported in exchange.
Circuitous voyages; fisheries 1274
Commerce by land 1275
Slave trade to Africa; mode of conducting it; restraints upon it, Slaves from Georgia 1276

STATISTICAL GEOGRAPHY.

NATIONAL POWER—p. 258.
Power of nations in rugged countries 1277
Countries thinly settled 1278
Countries thickly settled 1279
Influence of knowledge on power; of wealth, its origin; illustrations 1280
States of the first rank in Europe 1281
—of the second rank 1282
—of the third rank 1283
—of the fourth rank 1284
In Asia; Russia; Chinese Empire; Persia & Turkey; Hindoostan; Chin India 1285
—Asiatic I. & Polynesia 1286
—in Africa; Barbary S.; Egypt; others; Ashantee; general character of Asiatic, African, Sts. S. American States & Mexico 1287
National power of the United States 1288

Page
NORTH AMERICA. 261
Greenland "
Russian America 262
British America "
—Lower Canada "
—Upper Canada 263
—New Brunswick "
—N. Scotia—N.-Fo'nd. Labrador, Hudson's Bay. 264
UNITED STATES. 265
Eastern States "
Maine "
New-Hampshire 266
Vermont "
Massachusetts "
Connecticut 267
Rhode Island 268
Middle States "
New York "
Pennsylvania 269
New Jersey 270
Delaware "
Southern States "
Maryland "
Virginia 271
District of Columbia "
North Carolina "
South Carolina 272
Georgia "
Western States "
Alabama "
Mississippi 273
Louisiana "
Ohio "
Indiana 274
Illinois "
Kentucky 275
Tennessee "
Missouri "
Territories of the U. S. 276
Michigan T. "
Huron T. "
Missouri T "
Western T. "
Arkansaw T. "
Florida 277
Spanish North America "
Mexico "
Guatemala "
Native tribes of North America. 278
West Indies 279
Table of extent and pop. 280
Hayti or St. Domingo "
Cuba 281
Porto Rico "
Jamaica "
Bahama Isles "
Bermudas 282
Carribbee Isles "
SOUTH AMERICA "
Colombia 283
—New Granada "
—Equator "
—Venezuela "
Guiana—Brazil 284
Peru 285
Chili 286
La Plata—Monte Video "
Paraguay 287
Upper Peru, or Bolivia "
Independent tribes of S. America, Patagonia and Amazonia 288
Islands of S. America 289
EUROPE "
Russian Empire 290
—Russia in Europe "
Poland—Siberia 291
The Caucasus 292
Sweden "
Norway—Lapland 293
Denmark—Iceland 294
Great Britain "
—England and Wales 295
—Scotland 296
—Ireland 297
—Foreign British Possessions "
Holland—Belgium 298
Germany "
Austria 299
Prussia 300
German States "
Southern German States 302
Bavaria "
Wurtemburg "
Baden "
Middle German States "
Saxony "
Saxon States—Nassau 303
Hessian States 304
Northern German States "
Hanover "
Brunswick 305
Dutchies of Oldenburgh "
& Mecklenburgh "
Switzerland 306
France "
Spain 307
Portugal 308
Italy "
Naples—Roman States 309
Sardinia—Lombardy 310
Tuscany, Modena, &c. 311
Ionian Isles "
Greece "
Turkish Empire 312
—Turkey in Europe "
ASIA 313
—Turkey in Asia "
Persia—East Persia 314
Independent Tartary "
Chinese Empire—China 315
—Chinese Tartary-Tibet 316
Japan "
Arabia 317
India "
Hindoostan "
Nepaul and Bootan 319
Ceylon "
Chin India "
Burmah—Assam 320
Siam—Malacca "
Empire of Anam "
-Cochin China—Tonkin 321
-Cambodia, Siampa, Laos "
AFRICA 322
Northern Africa
Barbary—Morocco "
Algiers 323
Tunis "
Tripoli 324
Barca—Fezzan "
Egypt "
Western Africa 325
Senegambia "
Sierra Leone—Liberia "
Upper Guinea "
—Dahomey 326
—Benin "
—Ashantee "
Lower Guinea—Congo
—Loango—Angola 327
—Benguela "
Central Africa, Soudan "
Nubia—Sennaar 328
Abyssinia "
Eastern Africa 329
Adel, Ajan, &c. "
Zanguebar, &c. "
South Africa 330
Colony of the Cape "
Native Tribes—Caffres "
Bosjesmans "
Corannas, Matchappes 331
Namaquas "
Islands West of Africa "
Azores, Madeiras, &c. "
Isl's in G. of Guinea "
Islands South of Africa 332
Islands East of Africa "
Madagas. Bourbon, &c. "
OCEANICA. "
MALAYSIA.
—Sumatra, Java, Celebez "
—Borneo—Spice Islands 334
—Philippine Isles "
AUSTRALIA "
—Papua, or New Guinea "
—New Holland. Van Diemensland, N. Zealand 335
POLYNESIA "
Islands N. of Equator "
Islands S. of Equator 336

QUESTIONS ON THE MAPS.

QUESTIONS ON THE MAP OF THE WORLD.

The two principal divisions of land on the earth's surface, are the eastern and western continents; which appears to be the largest? On which side of the equator do we find the most land? What great divisions of water are there? What ocean separates America from Europe and Africa? What one America from Asia? What one lies south of Asia, between Africa and New Holland? Which ocean appears to be the largest? Which next in size? Which the smallest? What straits between America and Asia, connecting the Pacific and Arctic Oceans? What Ocean lies around the north pole? The south? Which is the most extensive?

Into how many grand divisions is America divided? Which is the largest? By what Isthmus are they connected? What are the grand divisions of the Eastern Continent? Which of these is the largest? Which the smallest? What island south of Asia, about as large as Europe? What Isthmus connects Africa and Asia? What Sea separates Europe from Africa? Describe the boundaries of Europe on the N. E. S. and W. How is Asia bounded? Africa? South America? North America? Is Greenland a part of North America? What land west of Greenland, near the pole?

What Bays and Gulfs in the northern part of North America? What Gulf between North and South America? What Sea? What straits lead into Hudson's Bay? Baffina? What Straits westward of Baffin's Bay, separating America from North Georgia? What sea separates Europe from Africa? What straits connect it with the Atlantic Ocean? What narrow sea separates Africa from Asia? What seas south of Asia? What east? What seas in Europe? What others north and west of it? What inland seas in Asia? Mention some of the largest gulfs and bays of the eastern continent. Name the most important of the great North American chain of lakes, beginning at the south-east, and proceeding to the north-west.

What cape at the southern termination of America? Of Africa? Of Greenland? Of the western part of New Holland? Of Madagascar? Of Hindoostan? Of California? Of New-Guinea? Of Ireland? What is the easternmost cape of America called? The most western of Africa? The most western of North America? The most eastern of Asia? The most northern of Europe? The most northern of Asia? The most eastern of Africa? The most northern of New Holland?

What large group of islands lies eastward of the Indian Ocean? Which island is the largest? Which is the next in size? Which way from New Holland are the two Islands of New Zealand? Which way from Australia is Polynesia? Name some of the principal groups of Islands belonging to Polynesia. Which of these groups lies in the latitude of Mexico? In what direction are they from the United States? Which two in the latitude of Brazil? What Islands and countries does the Equator cross? Which three grand divisions of the earth lie wholly north of the Equator? Which one lies chiefly south of it? What part of Africa is south of the Equator? What large islands are wholly south of the Equator? What countries does the Arctic circle cross? The Antarctic? The Tropic of Cancer? The Tropic of Capricorn? What two great empires on the eastern continent, lying one in 40, and the other in 55° of N. latitude, are wholly composed of islands? What are the chief circles of the globe? (*See the borders of the map.*) How many zones are there, and how situated? Which two grand divisions of the world lie chiefly in the Torrid Zone? Which two extend a little way into the Southern Temperate Zone? Which two are chiefly in the Northern Temperate Zone? Which one extends from the Torrid, across the Temperate,

ance and direction of the nearest course from North America to Liberia? From the eastern part of Siberia to Iceland? In travelling from Beering's straits across America, Greenland, and the Atlantic, to Norway, along the Arctic circle, your course will be east; what will it be if you go directly across the pole, in the nearest direction?

NORTH AMERICA.

QUESTIONS ON THE MAP OF NORTH AMERICA.

What is the extent of North America in degrees? How is it bounded?

[*In bounding countries, let the pupil always proceed in the same order, beginning at the North, and going on to the East, South and West.*]

What countries lie between North America and the North Pole? What are the principal divisions of North America? What territories lie next south of the Arctic Circle? What country is in the middle regions? What countries in the south, and what portions of the United States? What islands lie in this latitude?

What is the most Eastern point of North America? What is the most Western? What isthmus unites it to South America? What straits separate the continent from Greenland? What from North Georgia? What is the southern cape of Florida? Between what latitudes does North America lie?

Boundaries and Capitals.—Where is Russian America? How are the British territories bounded? Describe the chain of lakes which separates them from the United States. What are the capitals of the Canadas? How are the United States and their territory bounded? Where is the seat of general government? How far west do the United States proper extend? How is Mexico bounded? What is its capital? What are the boundaries of Guatemala? Its capital?

Gulfs, Bays and Straits.—What Gulf south of North America? What two large Bays in the N. E.? What straits on the northern boundary? What straits lead into Hudson's bay? What bay between Nova Scotia and New Brunswick? What gulf between Newfoundland and New Brunswick? Where are Beering's Straits? What gulf and sounds on the western coast?

Mountains.—What is the course of the Chippewan or Rocky Mountains? What is the course of the Allegany Ridge? (*See map of the United States.*) What lofty mountains on the north-west coast?

Lakes.—What six lakes lie between the United States and the British territories? Which is the largest, and which the smallest? What lake is next to the Lake of the Woods on the north-west? What others beyond this in the same direction? Which is the most northern? What are the two principal lakes of Mexico and Guatemala? How far is it from Lake Nicaragua to the Pacific Ocean? Into what sea does this lake empty?

Rivers.—What are the two principal rivers flowing from the Rocky Mountains into the Pacific Ocean? What two rivers empty into the Arctic Ocean? Mention some of the rivers emptying into Hudson's Bay. What river runs from the great lakes into the Gulf of St. Lawrence? What two great rivers empty into the Gulf of Mexico? What are the principal rivers that flow into the Mississippi from the west? What large river from the east?

Describe the branches of the Columbia. Through what lakes does Mackenzie's River pass? What lakes supply Churchill River? What river runs from

Lake Winnepeg to Hudson's Bay? What river flows from Lake St Joseph into Hudson's Bay? Are there any rivers of importance in New Britain and Greenland? What is the size of the two great rivers which flow into the gulf of Mexico? Where does the Mississippi rise? Describe the branches. What branches has the Missouri, and on which side are they?

Islands.—What islands are there at the mouth of the St. Lawrence? What is the largest on the coast of the United States? What islands are there at some distance east of the United States? What islands lie between North and South America? Which is the largest? What are the three next? What name is given to the most northern group of islands? Mention some of the small islands called the Caribbean, lying east of Porto Rico. Which is the most southern and largest of these? What islands on the coast of South America, west of Tobago? What are the principal islands on the western coast of North America?

Latitudes and Longitudes in North America.—What parts of North America are between 50° and 60° of north latitude? What between 40° and 50°? What between 30° and 40°?

What is nearly the latitude of Quebec and Montreal? Of Washington? Of New-Orleans? Of Mexico? Of the West Indies? Find the longitude from London, of Philadelphia, New-Orleans and Mexico.

GREENLAND.

In what direction is Greenland from the United States? What is its southern cape? What straits separate it from Labrador? What island and settlement on the western coast?

RUSSIAN AMERICA.

Where is Spitzbergen? (*See map of the World.*) What is the most western cape of North America? What peninsula south of it? What sound and inlet near Alaska? What mountains on the coast, and of what height? Where is Portlock Harbor? What parts of Hudson's Bay and of Greenland are nearly in the same latitude? What parts of Europe are in this latitude?

BRITISH AMERICA.

How are the British possessions bounded? Describe the southern boundary. What bay do they include? What divisions are made around Hudson's Bay? What large lakes are there? What are the chief rivers running north? What rivers empty into Hudson's Bay? What fort and trading houses on Hudson's Bay? Where is the most northern, and where is the most western trading house?

NEW-BRITAIN.

What Indians are found on the coast, and what in the interior of New-Britain? (*See map.*) What missionary station on the Labrador coast? (*Two others have been established in Labrador.*) What provinces lie south of New Britain?

BRITISH PROVINCES.

How are the British provinces divided? How are they bounded? Where is Niagara, and what lake empties over the falls at this place? (*See map of the United States.*)

Which is the most eastern British province? How is it bounded? What is the chief town? Where are Cape Breton, and Prince Edward or St. Johns? What town in Cape Breton? What other islands in the Gulf of St. Lawrence? What one on the coast of Nova Scotia? How is Nova Scotia bounded? What is the capital? What cape at the south? What are the boundaries of Lower and of Upper Canada? (*See map of United States.*) What river divides them in part? What is the capital, and what are the other principal places of Lower Canada? (*See map of the United States.*) What of Upper Canada? How is New-Brunswick bounded? What are its principal places? With what lake does the St. Lawrence communicate? What lake lies N. of Lake Huron?

UNITED STATES.

How are the United States bounded? What is the capital? What are the two principal chains of mountains? What great river and its branches, in the basin between these chains? What great river west of the Chippewan mountains? What peninsula stretches to the south? How far is the southern cape of Florida from Cuba? Between what latitudes do the United States lie? Between what longitudes? How much of North America do they appear to occupy?

MEXICO.

How is Mexico bounded? What are the chief rivers? What gulfs, and what peninsulas do you find? What provinces are mentioned on the map? What is the capital?

What are the chief sea-ports on the Pacific? What on the Gulf of Mexico? Which are the nearest ports to Mexico? What two cities S. E. of Mexico? What volcano? What cities between Mexico and the Tropic of Cancer? What are the principal, N. of this line? What is the most northern town in the interior? What capes on the Pacific? What islands off the coast? Which is the most northerly port, and what is its size? What places on the Gulf of California? What island in it?

GUATEMALA.

How is Guatemala bounded? What is the capital? What sea-port besides? What one on the Gulf of Amatique? Where are Ciudad Real and Vera Paz? Where is Chiapa, or Chiapa of the Indians? What lake in the south, and where does it empty? What is the nearest port of South America, situated on the isthmus?

WEST INDIA ISLANDS.

Where are the West Indies? In what latitude do they lie? Which is the largest island? Which is the 2d? the 3d? the 4th?

BAHAMA ISLES.

What are the chief islands of the Bahamas? What gulf between them and Florida? What dangerous bank or shoal near them?

LARGER ISLANDS, OR GREATER ANTILLES.

Which is the largest of the West India islands? Which is the most eastern? Are there any mountains in Cuba? In what direction and how far is it from Florida? What is the chief city? What city on the south side? Which way is St. Domingo from Cuba? What are the chief towns? Where is Porto Rico? Where is Jamaica? What is the principal place?

CARIBBEE ISLANDS.

In what direction are the Caribbee Islands from Porto Rico? Which is most northern? Which the most southern and how is it situated? (*See map of South America.*) Mention the rest in their order.

BERMUDA ISLANDS.

Where are the Bermuda Isles? What is their population?

QUESTIONS ON THE MAP OF THE UNITED STATES.

What ocean bounds the United States on the east? What Gulf on the south? What lakes on the north? Describe the northern boundary west of Lake Superior. (*See map of N. America.*) The southern boundary from the Gulf of Mexico to the Pacific Ocean. What bay is there on the coast of Massachusetts, and what are its capes? What islands south of Massachusetts and Rhode-Island? What island and sound S. of Connecticut? What is the eastern point of Long-Island called? What bay lies S. of New-Jersey? What are its capes? What bay divides Maryland? What capes at its mouth? Which of these bays is the largest? What states lie upon each? What sounds are there on the coast of N. Carolina? What inlets lead into them? What capes on this coast? What islands on the coast of Georgia and Florida? What one on the Pacific Ocean?

Mountains.—What is the principal range of mountains in the United States east of the Mississippi River? Through what states do they pass? What branch passes into Tennessee? What is the most eastern ridge called? Where do the rivers empty which rise on the eastern side of these mountains? What great river receives most of those on the western side? What ranges of mountains are there in the northeastern states? What range of mountains west of the Mississippi River? What are the principal peaks? What mountains and hills between the Allegany and Chippewan Mountains?

Rivers.—Where is the Hudson River? What are the six principal rivers emptying into the Atlantic, east of the Hudson? Which is the largest?

What is the course of the Connecticut River, through what states does it pass, where does it empty, and what is its comparative size? Describe in the same manner, the other five principal rivers of New England.

Describe the Hudson River and its principal branch. Describe the two large rivers next south of the Hudson, and their branches. What is the general course of the rivers which have been described? What is the general course of the rivers which empty into the Atlantic, south of the Susquehannah? What rivers empty into Chesapeake Bay, and on which side? What considerable branch has the Potomac? Describe the rivers emptying into Albemarle Sound, and their branches. Describe those emptying into Pamlico Sound. What rivers are found between these and Savannah River? Describe their source, size, and branches. Describe the Savannah, and the rivers S. of it emptying into the Atlantic. What river forms the southern boundary of Georgia? What is the principal river of East Florida?

What river passes through Florida, into the Gulf of Mexico? What branches form it? Mention the eastern and western branches of the Mobile River, which empties at the town of Mobile. What two rivers between the Mobile and the Mississippi? What are the two principal eastern branches of the Mississippi, S. of the Ohio? What two rivers form the Ohio, and where do they rise? Describe the principal branches of the Ohio on the south side, beginning at the mouth. Describe those on the north side. What branches has the Mississippi N. of the Ohio? What are the three largest western branches of the Mississippi? What N. of the Missouri? What between the Missouri and Arkansaw? Describe the sources and course of the Missouri. Describe its principal branches. What lakes near the mountains?

What rivers empty into the Pacific from the U. S. Territory? What two branches of the Columbia rise near the Missouri? Mention the smaller branches.

Lakes.—What is the most western of the great chain of lakes N. of the United States? What islands does it contain? What straits connect it with L. Huron? What lakes near the mouth of the Mississippi?

Where is Lake Michigan, and with what lake does it communicate? What lake between Huron and Erie? What river empties into it? What rivers empty into Lake Erie, and from what state? What river and falls between Erie and Ontario? Where are the falls on the river? What rivers empty into Lake Ontario?

What states lie upon these lakes? What lake E. of Ontario, and how is it connected with the St. Lawrence? What small lake is connected with this? What small lake E. of Champlain, and what river passes from it? What lakes in Maine?

Boundaries and Capitals.—What six states lie East of the Hudson River? What are their boundaries and seats of government, beginning at the most eastern? What four states lie next to these, east of Maryland and Ohio? Mention the boundaries and capitals of each. What eight states lie on the Mississippi and its branches, and what are their boundaries and capitals? What six states lie east of these, on the Atlantic and Gulf of Mexico? What are their boundaries and capitals? Where is Florida? What three other territories, near the states which have been mentioned?

EASTERN STATES.

Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.

MAINE. Describe the boundaries, mountains, rivers, and capital of Maine. [What are the counties lying on the coast? What in the interior?] What are the chief seaports of Maine? What towns in the interior? Where is the college of Maine?

NEW HAMPSHIRE. Describe the boundaries, mountains, lakes, rivers, and capital of New Hampshire? [What are the three southern counties? The three northern? The central county?] What seaport has New Hampshire? Where is its college? What other towns on the Connecticut River? What towns in the southern part of the state?

VERMONT. Describe the boundaries, mountains, lakes, rivers, and capital of Vermont. [What five counties lie west of the Green Mountains? What east of these mountains? Where is Orleans county?] What are the principal towns west of the mountains? What east? Where are its two colleges?

MASSACHUSETTS. Describe the boundaries, mountains, rivers, and capital of Massachusetts. What bays and capes has it? Which is the most western county? What three counties lie on Connecticut River? Where is Worcester county? What are the three eastern counties? Three south-eastern? (*Boston and the neighboring town of Chelsea form a distinct county, called Suffolk. Nantucket Island is a county—Martha's Vineyard is Duke's County.*) What seaports N. of Boston? Where is Plymouth?

What port on the southern coast? What town N. of it? What islands near it? What are the principal places on the Connecticut River? What are the principal places between the coast and the river? What west of the Connecticut? Where are the colleges of Massachusetts? What canal has it?

CONNECTICUT. Describe the boundaries, rivers, and two seats of government of Connecticut. [What are the four northern counties? Four southern? Which lie on the Connecticut River, and which on the eastern and western boundaries?] What are the principal places on the coast, and how situated? What on the Connecticut River? What others east of the river? What west?

RHODE ISLAND. Describe the boundaries and capital of Rhode Island. What bay and river in it? [What are the five counties, and how situated?] What are the chief towns on the bay? What island S. of Rhode Island?

MIDDLE STATES.

New York, Pennsylvania, New Jersey, Delaware.

How are the Middle States bounded? Between what latitudes are they? Which is the smallest and most southern? Which is the next larger, and which are the largest? Which lie on the Atlantic? Which are on the lakes?

NEW YORK. What are the boundaries of New York? What rivers in the eastern part? What in the western part? What two large rivers rise in this state? Where is the capital? What is the chief city?

[What four counties lie next north of New York? Mention eight north of these, in pairs, on each side of the Hudson River. Three on Lake Champlain. Three on he St. Lawrence. Four between Jefferson and Essex. Six on Lake Ontario. Two on Lake Erie. Six bordering on Pennsylvania, and two on the Delaware River. Seven around the small lakes. Four on the Mohawk. Four lying south of these.]

What are the two principal towns on the east side of the Hudson River? What towns on the west bank, beginning at the mouth? What towns on and near the Mohawk River? What places on lake Champlain? What is the principal one on the St. Lawrence? What places on Lake Ontario? What on Niagara River? What places near the small lakes? Where is Oswego? Rochester? Batavia? What places in the southern part? What Lake? What islands near New York? What are the counties and principal places of Long Island? What county on Staten Island? Where is Gardner's Island? Which is the most eastern of the small lakes of New York? On what lake is Skeneateles? Auburn? Ithaca? Geneva? (*Canandaigua is on Lake Canesus.*) Where are the colleges of New York?

PENNSYLVANIA. Describe the boundaries, mountains, rivers, and capital of Pennsylvania. What is the chief city?

[What six counties lie on the Delaware River? Six bordering on New York? Six on the western boundary? Eight on the southern? Seven along the Blue Ridge, on each side? Four above these on the Susquehannah? Six surrounding Centre County? Seven west of the Laurel Hills and Clearfield?]

What towns on the Schuylkill? What inland towns W. of it? What four towns W. of Lancaster, in the southern part of the state? What is the principal town in the western part of the state, and how situated? What place south of it? Where is Meadville? What towns on the Susquehannah and its branches? What places in Northampton County? Where are the colleges of Pennsylvania?

NEW JERSEY. Describe the boundaries, rivers, and seat of Government of New Jersey? [What are the three northern counties? Four Central? Six southern?] What towns in the middle section of the state? What towns between Trenton and Philadelphia? What places south of Philadelphia? What harbors on the coast? What is the southern cape, and what the northern of this coast? What towns in the northern part? (*Patterson is remarkable for the falls of the Passaick River.*)

DELAWARE. Mention the boundaries, rivers, and capital of Delaware? What other towns are most important? What cape has it? How does Delaware compare with other states in size?

SOUTHERN STATES.

Maryland, Virginia, North Carolina, South Carolina, Georgia.

Which are the Southern States? How are they bounded? Which is the largest of these states? Which is the most northern, and which the most southern? Which lies on the Gulf of Mexico?

MARYLAND. What bay divides Maryland? Describe the boundaries, rivers, capital, and chief city. What are the towns N. of Baltimore? What on the eastern shore of Chesapeake Bay? What on the Potomac, at the south?

VIRGINIA. Mention the boundaries, rivers, and mountains of Virginia. Describe the capital. What is the largest seaport? What place is opposite to Norfolk? What canal from it? What town at the mouth of James River? What places on and near York River? Where is Petersburgh? Fredericksburgh? What places between these and the mountains? What among the mountains? What springs in the mountains? What three places on the Ohio? What other towns? What colleges in this state?

DISTRICT OF COLUMBIA. What is the population of Washington? What is the size of Alexandria and Georgetown?

NORTH CAROLINA. Mention the boundaries, sounds, capes, and chief rivers of North Carolina? What is the capital? Where are Fayetteville and Newbern? What towns N. E. of the River Neuse? How are they situated? Where is the university of this state? What considerable place is north of this? What ports

Islands.—What islands are there on the northern coast of South America? What islands lie north of the Orinoco? What one at the mouth of the Amazon? What islands off the coast of Brazil? On what island is Cape Horn? (*Hermit Island.*) What islands east of it? Where are the newly discovered islands, called the South Shetland Isles? (*See map of the World.*)

Where is Juan Fernandez, the island of Robinson Crusoe? What islands, N. of it? What is the chief island near the coast of Chili?

Latitudes and Longitudes.—What are nearly the latitudes of the northern and middle countries of South America? What countries of America north of the equator have the same latitude with the southern countries? (*See chart of the World.*) What places do you find in latitude 10° north? What places under the equator? What places do you find 12° south of the Equator? What islands are in about 20° south latitude? What islands in the Pacific are in the same latitude? What islands and countries are in 20° north latitude? What places lie in 34° or 35° south latitude? What is the latitude of Cape Horn? What other land can you find in the same latitude? Between what longitude does South America lie? What parts of North America are in the same longitude with Brazil? What with Peru? What countries of South America have noon at the same time with Philadelphia? (*See the Chart.*) What is the difference of time between Philadelphia and the eastern parts of Brazil? What is the difference of time between Peru and London?

NORTHERN COUNTRIES.

COLOMBIA.

How is Colombia bounded? What rivers has it? What is the capital? In what latitude is Quito? What is the mountain near which it stands? What other near, which is the highest in South America? What place west of the Andes? Where is Popayan? What ports on the Isthmus of Darien? What ports on the northern coast? Describe the course of the mountains in Colombia.

What is the chief town of Venezuela? What is the port of Caraccas? What other ports? Where is Truxillo? Merida? St. Thomas? What other town on the Orinoco? What island at the mouth?

GUIANA.

What great rivers inclose Guiana? How is it bounded? Among whom is it divided? (*Surinam is Dutch Guiana, and Demarara, English Guiana.*) What river separates Demarara and Surinam? What other rivers are the principal? What places on the coast, and where? What missions are there in the interior?

MIDDLE COUNTRIES.

PERU.

How is Peru bounded? What mountains pass through it? What is the capital, and where? What is the nearest sea port? Where is Cusco, the ancient Indian capital? What are the principal places besides this E. of the mountains? What place near the sea, N. of Lima?

UPPER PERU, OR BOLIVIA.

How is Bolivia bounded? What is the capital? What lake on its borders? What great rivers rise in this country? What mountains on the south? What are the chief towns?

AMAZONIA.

How is Amazonia bounded? What rivers has it? What settlements are nearest to it, in Brazil, Peru, and La Plata?

BRAZIL.

How is Brazil bounded? What is its capital? What great rivers has it in the north? What ports north of Rio Janeiro? What places S. W. of it? What mines and mining towns N. of Rio Janeiro? What others in the western part of Brazil? What islands off the coast?

SOUTHERN COUNTRIES.

LA PLATA, OR BUENOS AYRES.

How is La Plata bounded? What is the capital? Where is Monte Viedo? What three places are there on the Paraguay River? Where is Mendoza? What two places north of it?

CHILI.

How is Chili bounded? What extensive desert is there on the north? What is the capital? What is one of the most remarkable peaks of the Andes in Chili? What place near this mountain? What are the principal seaports? Where is Valparaiso? What island near the southern part? What islands off the coast?

PATAGONIA, AND THE SOUTHERN ISLES.

How is Patagonia bounded? What islands east of it? What other islands lie south of it? What is the most southern land yet discovered? (*See map of the World.*)

EUROPE.

QUESTIONS ON THE MAP OF EUROPE.

How is Europe bounded on the N., E., S., and W.? Mention particularly the seas on the south, and the mountains and rivers on the east. Describe the old and the new boundary of Europe on the east. What divides it from Africa and Asia? What is the northern cape of Europe? What the most southern? Between what latitudes and longitudes does it lie? What capes in Spain? In Ireland? England? On the coast of the Mediterranean? What is the northern cape of Africa?

Boundaries and Capitals.—What are the five countries of Europe lying N. of 55° latitude? What are the boundaries of each? What are the eight middle countries, between 55° and 45°? What are the boundaries of each? What are the four S. of 45°, and their boundaries? What parts of Asia and America are in the same latitude with the northern countries of Europe? What with the middle and southern countries? What are the capitals of the five northern countries and Poland? What are the capitals of the eight middle countries? Of the four southern?

Seas, Gulfs, and Straits.—What four seas are there in the northern part of Europe? What two gulfs in the Baltic? What are the straits or sounds called, which lead into the Baltic sea? What five seas are there in the south of Europe? What three gulfs in the Mediterranean? What straits lead into the Mediterranean? What countries are on the Baltic? On the North Sea? What on the Mediterranean? The Archipelago? Black Sea? What Straits lead into the Sea of Marmora? What straits between England and France? What channels near the British Isles?

Mountains.—What three chains of mountains in the northern part of Europe? In what direction do they run? What four chains in the middle of Europe? What are the principal chains in the south of Europe? What mountains in Circassia? Where is the Sierra Morena? What are the highest mountains in Europe? What chain is the longest? Describe the situation and height of Mount Heckla in Iceland. Mount Vesuvius, in Italy. Mount Etna, in Sicily.

Lakes.—What lakes in Sweden? What in Russia?

Rivers.—What three rivers in the north of Russia? What are the two chief rivers of Sweden? What four rivers enter into the Baltic from the south? What river enters the Skaggerack from Norway? What two rivers of England empty into the North Sea? (*The Tweed and the Forth empty into it from Scotland.*) What four from the continent? (*The Rhine passes through Lake Constance in Switzerland.*)

What river empties into the British Channel? What two into the Bay of Biscay? What five enter the Atlantic from Spain? What two pass into the Mediterranean from Spain and France? (*The Rhone passes through the lake of Geneva.*) What four enter the Black Sea? Describe each of the rivers mentioned, beginning at the north, and proceeding along the coast, (i. e. *tell where it rises, what course it runs, where it empties, and what is its class and comparative size.*) What river near Rome? What one enters the Gulf of Venice? Describe each. What branches has the Danube? What river empties into the Sea of Azof? What is the largest river in Europe? Which are the two largest in the west of Europe?

Islands.—What are the two largest islands west of Europe? What are the islands N. of Europe? (*See map of Asia or the World.*) What are those N. of Great Britain? West of Scotland? In the British Channel? In the Baltic Sea? What are the two largest in the Mediterranean? What are those near Spain? Those near Italy? Those between Italy and Turkey? What south of Sicily? (*See map of Africa.*) What are the chief islands in and near the Archipelago?

Latitudes and Longitudes.—Mention three capitals nearly in the latitude of the Shetland Isles and Greenland. What four others in that of London, and the Straits of Bellisle in North America? What capitals between 45° and 50° of latitude? What places in the latitude of Halifax? Of Boston? What capitals nearly in the latitude of New-York and Madrid? What in that of Washington? Trace the line of 36° latitude (which is nearly that of Raleigh, North Carolina,) to the Caspian Sea, and mention the places and coasts on and near it. Find the longitude of London—Petersburg—Paris—Rome—Constantinople.

RUSSIA, IN EUROPE.

Describe the boundaries, capital, and rivers of Russia. What mountains has it? What lakes? What towns are on the White Sea? What is their class and population? What place is at the head of the Baltic Sea? Describe the two principal places in Finland. What rivers in Finland? What city N. W. of Petersburg, which is its seaport? What two other seaports on the Baltic S. of Petersburg, and how situated? Describe the situation and size of Moscow. What three places on the Volga N. of Moscow, and of what size? What three places between Moscow and the Dnieper? What two on the Dnieper? What two ports on the Black Sea? At what places in Russia do you find universities?

What town on the Sea of Azof? What city in the west of Russia? What towns on the river Ural? What city on the Caspian Sea? What missionary station in Circassia? What are the principal towns of Georgia?

Spitzbergen and Nova Zembla are frozen, uninhabited Islands, belonging to Russia. Where are they situated? (*See map of the World.*)

POLAND.

What rivers are found in Poland? Which of them are connected by canals? Where is Warsaw, the capital? What places N. E. of this? Where is the free city, Cracow? What universities do you find?

SWEDEN.

How is Sweden bounded? What mountains separate it from Norway? What river from Russia? What lakes are there in the southern part of Sweden? What is the chief river? What is the capital of Sweden? On what lake is Stockholm? What other sea-port of importance on the eastern coast? What one on the western? What other important places are there? What universities in Sweden?

NORWAY.

How is Norway bounded? What are the northern and southern capes? What islands on the N. W. coast? Where is the Maelstrom? What is the chief river? The capital? What is the most northern town? What place on the western coast, formerly the capital? Describe the principal places in the south? What universities or colleges?

LAPLAND.

What river in Lapland? What village deserving of notice?

DENMARK.

Including Iceland, and the Faroe Isles.

How is Denmark bounded? What islands belong to it? Describe the capital. (*It is on the island of Zealand.*) Where is Elsinore? Where is Altona, and how large? What great sea-port is near it? What universities do you find? Where are the Faroe Isles? Where is Iceland, and how is it remarkable? What volcano has it?

ENGLAND.

How is England bounded? What channel and straits divide it from France? What islands in this channel belonging to England? What island opposite Portsmouth? Describe the capital. What are the three principal rivers? Where are the universities? What two seaports on the Channel? Where is Bristol? What other seaport on the west? Which way from Liverpool are the great manufacturing towns of Birmingham and Manchester? What two seaports on the North Sea? What two other important places in the north?

SCOTLAND.

How is Scotland bounded? What islands belong to it? What is the capital, and where? What seaport in the west? What two ports on the eastern coast? Where is Perth? Where are the universities of Scotland?

IRELAND.

How is Ireland bounded? What is the chief river? What place on the Shannon? Describe the capital. What is the chief seaport in the south? What port in the west? What are the two principal places in the north? What is the southern cape of Ireland? What university in Ireland?

KINGDOM OF THE NETHERLANDS.

Including Holland and the Netherlands.

How is the Netherlands bounded? What rivers pass through it? What is the capital? On what sea is it? Where is the Hague? What two other cities in the south?

GERMANY.

How is Germany bounded? What states does it include? What rivers pass through it? In what part of Germany is Bavaria? What are the two principal places in Bavaria? Where is Wurtemburg, and what is its chief city? Where is Saxony, and what is its chief city? Where is Hanover, and what is its chief city? Where are the free cities, Frankfort, Bremen, Hamburgh, and Lubeck? What other city do you find celebrated for a university?

PRUSSIA.

How is Prussia bounded? On what river is that part of Prussia which is west of Hanover? What three rivers empty in it? What large river passes through it? Describe the capital. Where are Konigsberg and Dantzic? What cities on the Oder? What places on the map have universities?

AUSTRIA.

How is Austria bounded? What rivers are there? What mountains? What are the chief divisions of Austria? Where is the capital? Where is Presburg? What two cities below it on the Danube? What two north of Vienna? What one in the N. E.? Where is Trieste? Inspruck? Ragusa? What three Italian cities are now in Austria? Which of these places have universities?

SWITZERLAND.

How is Switzerland bounded? What two large rivers rise in it, and through what lakes do they pass? What is the capital? What are the two other principal places? What universities do you find?

FRANCE.

How is France bounded? What three rivers are there in the west? Describe the capital. What two other places on the Seine, and where? What towns nearest England? What city near the northern boundary? Where is Strasburg? What is the most western city in France? What three cities are there on the Loire? What remarkable seaport on the Garonne? Where is Rochelle? Where is Bayonne? What two cities between the Bay of Biscay and the Gulf of Lyons? Where does the Canal Royal pass? What town on the Rhone? What mountains west of it? What two seaports on the Mediterranean? Where is Corsica, which belongs to France? What is the chief town? Which of the places mentioned have universities or colleges?

SPAIN.

How is Spain bounded? What mountains has it? What river has it on the east? What rivers on the west and south? Describe the capital. What two capes on the north? What seaports? Where is Valladolid? What two principal cities N. of the Douro? Where is Salamanca? What cities on the Ebro? Where is the British fortress of Gibraltar? Name the seaports on the Mediterranean, beginning at the south. What two cities on the Guadalquiver? What cities between this river and the Tagus? What three islands on the coast of Spain? Where are the principal universities of Spain?

PORTUGAL.

How is Portugal bounded? What rivers pass through it? Where is the capital? What two cities in the north? What port in the southern part? What cape on the south? What university in Portugal?

ITALY.

Including Sicily and Sardinia.

How is Italy bounded? What river in the north? What mountains run through Italy? Where is the kingdom of Naples? What is the capital of this kingdom? What volcano near this city? Where is Sicily? What volcano is there on it? What are four of the principal cities of Sicily? Where are the Roman States? On what river does Rome stand? What is the size of Rome? Where is Bologna? Where is St. Marino? (*It is an independent republic of only* 7000 *people.*) Where is Tuscany? What places in it? What island on the coast? Where is the kingdom of Sardinia? What is the capital? What seaport of note? What is the chief city on the island of Sardinia? To what nation does Corsica belong? Where do you find universities in Italy?

TURKEY.

How is Turkey bounded? What are the principal rivers in it? What chain of mountains? Describe the capital. Which way from it is Adrianople? What places on the Danube? In what part of Turkey are Jassy and Bucharest? Where is Sophia? Salonica? What places in the S. of Turkey? What city in the N. W. part of Turkey? What sea and straits between Constantinople and the Archipelago? What large island south of the Archipelago? What are the six principal islands in the Archipelago?

REPUBLIC OF THE IONIAN ISLES.

Where are the Ionian Islands? Mention the principal, beginning at the north.

GREECE.

Where is Greece? How is it bounded? What peninsula does it include? What are the chief towns?

ASIA.

QUESTIONS ON THE MAP OF ASIA.

On what continent, and in what part of it is Asia? How is Asia bounded on the N., E., S., and W.?

Boundaries and Capitals.—What country occupies the northern part of Asia? How is it bounded, and what is the capital? Between what latitudes does most of it lie? What countries lie principally between 30° and 50° N. latitude, occupying the middle of Asia? Mention the boundaries and capital or chief city of Turkey—Independent Tartary—Chinese Tartary—Tibet—Persia—East Persia? What countries lie between Tibet and Hindoostan? What are the countries of Asia lying chiefly S. of 30° latitude? How far S. do they extend? What are the boundaries and capitals of Arabia? Hindoostan? China? Burmah? Anam or Tonkin? Siam? Malaya? What are the principal countries on the eastern coast of Asia? What on the western coast? What on the southern?

Seas, Gulfs, &c.—What seas are there on the west of Asia? Where is the Isthmus of Suez, which unites it to Africa? What straits lead to the Red Sea? Where is the Sea of Arabia? What gulfs and bays in the south of Asia? What seas on the east? What gulfs E. of Tartary?

Mountains.—What chain of mountains is there on the western boundary of Asia? What chain passes through Asia in the 50th degree of latitude? What names does it take in the eastern and north-eastern parts? What mountains north of Hindoostan? What chains of mountains in the great table-land between the Altaian and Himmaleh mountains? What chain bounds this table-land on the west? What chain extends west from the Himmaleh mountains? What south? What between Persia and Turkey? What mountains in Circassia? What in Asia Minor? In Arabia? In Hindoostan? Which is the longest chain in Asia?

Lakes and Inland seas.—What great inland seas are there in the west of Asia, not connected with the ocean? What lake in Turkey? What lake or sea is there in East Persia? What lakes in Siberia, and where? What in Chinese Tartary and Tibet?

Rivers.—What are the three great rivers in the north of Asia, beginning at the east? Where is the Olensk? What two branches has the Oby? What branch has the Yenesei? Through what lake does one of its branches pass?

What three great rivers in the east of Asia? What River empties into the China Sea? What one into the Gulf of Siam? What into the Bay of Bengal on the north? What on the east? What smaller ones on the west? What river in the west of Hindoostan? What in East Persia? Where are the Tigris and Euphrates? What rivers empty into the Caspian Sea? What into the Sea of Aral? What branch has the Sihon? What river near the borders of Asia empties into the Sea of Azof? How many of the great rivers of Asia rise from the mountainous regions of Tartary and Tibet? Describe each of the rivers named.

Islands.—What islands lie N. of Asia, and in what ocean? What three large islands are there on the E. coast of Tartary? What two islands near the coast of China? What small cluster more distant? What small islands lie in the Bay of Bengal? What large island S. of Hindoostan? What small groups west of this? What large islands next south of Chin-India and Malaya?

Latitudes and Longitudes.—What are the countries of Europe in the same latitude with Siberia and Kamschatka? What of America? What countries of America and Europe correspond to Tartary in latitude? What correspond to Turkey and the north of Persia, Tibet and China? What countries are farther south than any in Europe? What other portions of the world are in the same latitude?

What places in Siberia are nearly in the latitude of Petersburgh? What towns and mountains are nearly in latitude 51° N. or in that of London? What important places are from 39° to 41°, or nearly in the latitude of Madrid, Naples, and New York? What remarkable places do you find in latitude 30° to 33°, or that of New Orleans, Natchez and Savannah, in the United States? Near what remarkable places does the Tropic of Cancer pass? Does the Equator cross any part of Asia? What is the longitude of Turkey, from Philadelphia? What of Hindoostan? Of the Burman Empire? Of China? Of Japan?

SIBERIA.

What country occupies the northern part of Asia? How is Siberia bounded? What cape is on the north? What islands? What chains of mountains in and around it? What rivers in the northern part?

Where is Tobolsk? What other place on the Oby below this? Where is the Steppe of Issim? What lake near it? Where are Kolhyvane and Tomsk? What place near Lake Baikal? What river passes through this lake? What town on the river Lena? Where is Okotsk? What peninsula on the east, and what towns on it? What missionary stations are there in Siberia?

CIRCASSIA AND GEORGIA.

Where is Circassia? What missionary station in it? (*Karas.*) Where is Georgia? What is the chief city, situated on the River Kur?

TARTARY.

How is Independent Tartary bounded? What sea does it contain? What rivers has it? What is the capital? What are the other principal cities?

CHINESE TARTARY.

How is Chinese Tartary bounded? How is it separated from China? What great river is there on the east? What place on it? What other principal places in the eastern part? What peninsula there? What islands? What desert in the interior? What place in the western part of Chinese Tartary? What lakes and rivers?

TURKEY IN ASIA.

How is Turkey bounded? What is the capital? What chain of mountains in Asia Minor?

What are the three principal divisions? Where is the Christian province of Armenia? What rivers run from Turkey into the Persian Gulf? What port on the Archipelago? What port on the Black Sea? What places near the Black Sea? What cities on the Tigris, beginning at its source? Where is Jerusalem?

What three seaports in Syria? Where are Aleppo and Damascus? What island on the coast of Syria?

PERSIA.

How is Persia bounded? What is the capital? Where is Ispahan, the former capital? Where is Erivan? What other cities in the north? What seaport on the Gulf of Persia? Where is Shiraz? Are there any considerable rivers? Are there any deserts?

EAST PERSIA.

How is East Persia bounded? What are the two principal divisions? What is the capital of each? What mountains on the north? What river on the east? What city has it east of the Indus? What city in the west, and of what size? What river and what city in the south? What place near the mouth of the Indus?

TIBET.

How is Tibet bounded? What is the capital? What large rivers rise in the mountains of Tibet? What lake has it?

JAPAN.

Where are the islands of Japan, and how many are there? Which is the largest? What is the capital? What is the second city? Where is the chief place of trade, Nangasaki?

ARABIA.

How is Arabia bounded? What do you find in the interior? What mountains are the principal? What remarkable mountain near the Red Sea? Are there any considerable rivers? What is the capital? What is the port of Mecca on the Red Sea? Which way from Mecca is Medina? What is the principal place in the east? Where is Mocha? What place is near it? What place in the S. E., and how situated? What Arabian island near Cape Guardafui?

HINDOOSTAN.

How is Hindoostan bounded? What mountains are there on the north? What is the chief river? What three rivers in the southern part? What is the capital? Where is Delhi the former capital? Where is Agra? Mention the chief cities on the Ganges in their order. What are the eastern and western coasts called? What places on the eastern coast? What on the western coast? (*Bombay is on an island.*) What cities in the interior of the southern part of Hindoostan? What in the western part? Where is Golconda, celebrated for its diamonds? What is the southern cape of Hindoostan? What small islands are near it? What large island? What missionary stations are there in Hindoostan?

CEYLON.

Where does Ceylon lie? What is the chief town? Where is Trincomaly?

BURMAH, OR BURMAN EMPIRE.

How is the Burman Empire bounded? What is the chief river? What is the capital? What seaport in the south? What places on the river Irrawady? Where is Aracan?

SIAM.

Where does Siam lie? Is it a large kingdom? What is the capital?

EMPIRE OF TONKIN, OR ANAM.

In what direction from Burmah is Tonkin? What countries does it embrace? How is it bounded? What river passes through it? What is the capital? What other principal place? What place in Cambodia? What gulf on the east, and what island?

MALAYA.

How is Malaya bounded? What is the chief town?

CHINA.

How is China bounded? Where is the Chinese wall? In what latitudes does China lie? What are the two chief rivers? What is the capital? What are the principal ports and cities? Where is the most remarkable canal of China? What large island lies near the coast? What small cluster beyond it?

OCEANICA.

(Map of the World.)

EAST INDIA ISLANDS.

What cluster of islands lies E. of Tonkin? What are the principal islands in it? What group of Islands south of these? What are the chief islands in it? What two large islands lie between these and Malaya? What are the chief islands among the Isles of Sunda, or those lying S. of Borneo and Celebez? What very large island lies S. E. from Asia? To what division of the earth does it belong?

Which way from Malaya is Sumatra? What straits separate it from Malaya? Where is the British settlement of Bencoolen? What other place do you find? Which way from Sumatra is Java? What straits between them? What is the capital? What are the other principal islands among the Sunda or Sumatran Isles?

BORNEO AND CELEBEZ.

Where is Borneo? What is the capital? Between what islands does Celebez lie? Where is Macassar?

THE MOLUCCAS, OR SPICE ISLANDS.

What islands are included in the Moluccas? Which is the largest? Mention the relative situation of the others?

PHILIPPINE ISLES.

Which is the largest of the Philippine Isles? What others are the principal? What is the chief city, and its size?

AUSTRALIA.

Between what degrees of latitude and longitude does Australia lie? What islands does it embrace? What Gulf on the N. of New Holland? What name is given to the eastern coast? Where is Port Jackson? Where is Sidney Cove? What missionary station near it? What other in Australia? Where does Van Diemen's land lie? What settlement is there on it? What other islands in Australia?

POLYNESIA.

How far does Polynesia extend? What are the islands north of the Equator? Which are nearest to Asia? Which to America? What is the most northern island? Which are the principal of the Sandwich Islands? What islands south of the Equator? Which are the most southern and eastern? Where is Otaheite?

AFRICA.

QUESTIONS ON THE MAP OF AFRICA.

On which continent, and what part of it, does Africa lie? How is it bounded on the N., E., S., and W.? What isthmus unites it to Asia? What does Africa resemble in shape?

Boundaries and Capitals.—What countries lie north of the Tropic of Cancer? What are the boundaries and capitals of each, beginning with the states of Barbary on the west? What are the great divisions of the country between the Tropic and the Mountains of the Moon? What are the boundaries and capitals of each portion? What are some of the smaller divisions of Soudan? What are the great divisions of Africa between 10° north latitude and the southern tropic?

So little is known of Africa that it is impossible to obtain any accurate account of boundaries, in most parts of it. Those which are chiefly formed by Geographers, are marked by small dots; and those more certain, by larger dots with intervening lines as in Barbary.

What are the countries and chief cities in Lower Guinea? What are some of the countries and chief cities on the coast of Zanguebar? What countries N. of the Equator on this coast? What are the boundaries and capital of the Colony of the Cape?

Capes.—What is the most northern cape of Africa? (*See map of Europe.*) What is the southern cape? Between what latitudes does Africa lie? What are the eastern and western capes? Between what longitudes does it lie? What capes on the western coast above Cape Palmas? What capes on the coast of Guinea? What capes between this and the Cape of Good Hope? What capes on the eastern coast?

Seas, Gulfs, &c.—What sea lies on the east? What on the north? What straits at the entrance of the Red Sea? What channel on the east? What bays on the east coast of Africa? What on the western? What gulf near the Equator? What one on the northern coast?

Mountains and Deserts.—Where are the Mountains of the Moon? What mountains in the western part of Africa? What in the northern? What two chains of mountains between the Equator and the Tropic of Capricorn? What chain in South Africa? What are the principal deserts known, and where are they?

Lakes and Rivers.—Where is Lake Maravi? Lake Dembeah? Which are the two largest rivers of Africa? What three branches form the Nile? Where do they rise? Where does the Niger rise? Through what country does it pass, as it flows east? Where does it empty? What lake in Soudan?

The Niger was supposed to empty into the Nile, or a lake; but it has been discovered lately, that it empties, by several mouths, into the Gulf of Guinea.

Where is the Senegal? Which way from it is the Gambia? What rivers are south of the Kong Mountains? Where is the River Zaire? Where is the Bembaroque? What principal rivers in South Africa? In what mountains do they rise? Which is the largest? What is the chief river known on the east? What one in the S. part of Abyssinia? Describe each of the rivers mentioned.

Islands.—What three groups of islands do you find N. of Cape Blanco? What cluster off Cape Verd? What small islands on the coast, above Cape Verd? What below? What three islands S. from Cape Palmas? What in the Gulf of Guinea? What large one on the eastern coast? What two small ones east of this? What north of it? What in the channel of Mozambique? What Arabian island off Cape Guardafui?

Latitudes and Longitudes.—In what latitude do the northern portions of Africa lie? What is that of the Mountains of the Moon? Where does the Equator pass? In what zone does the middle portion or larger part of Africa lie? What is the latitude of South Africa? With what countries of Europe does it compare in latitude? What parts of the United States are in the latitude of Barbary? What places in Africa and the neighboring portions of Asia are in the latitude of Raleigh? Of Charleston? New Orleans? Mexico? What parts of Africa in the latitude of the West Indies? Of Colombia? Peru? Chili? Of Lima? Of Rio Janeiro? Of Valparaiso? What is the longitude of St. Helena from London? Of Egypt? (*See Chart of the World.*) What is the difference of time between Philadelphia and the Cape of Good Hope?

BARBARY STATES.

How is Barbary bounded? Name the states of Barbary, and their capitals. Which is the most eastern, and which the most western? What country in Europe is north of Morocco? What one north of Tripoli? What chain of mountains in Barbary? What place in Morocco on the Straits of Gibraltar? What seaports on the Atlantic? Which is the largest? What two cities in the interior? What other city besides the capital? Where is the Spanish fortress of Ceuta? In what direction from Algiers is Tunis? In what direction is Tripoli? Where is Derna? Where is the Great Desert? What mines are found in it? What name is given to the coast west of the Desert?

FEZZAN.

What country is east of the Desert? What is its chief town? What lies between Fezzan and Egypt? What place between Barca and Egypt?

EGYPT.

How is Egypt bounded? What is the capital, and on what river? What is the principal seaport? What two other seaports, and where? What considerable place above Cairo on the Nile? What three places above Siout? What seaport east of the river? What place is at the head of the Red Sea? What country of Asia is north of Egypt?

MIDDLE REGIONS OF AFRICA.

Where do most of the countries of Africa lie? What chain of mountains probably passes through the middle regions of Africa, from east to west? What great divisions of middle Africa lie north of these mountains, and what south? What countries belong to Eastern Africa? What to Western Africa? What to Central Africa?

WESTERN AFRICA.

SENEGAMBIA.

What rivers pass through Senegambia? What seaport and place of trade at the north? What other towns? What European settlement? What name is given to the coast between Senegambia and Morocco?

UPPER GUINEA.

What are the principal kingdoms in Upper Guinea, and what are their capitals? What is that of Ashantee? What two European settlements on the coast, and where? What names are given to different parts of this coast? Where is the English colony of Sierra Leone? What missionary station near it? What island S. of it? Where is Teemboo? Where is St. Paul's River? Where is the American Colony of Liberia?

LOWER GUINEA.

What is the principal kingdom of Lower Guinea? What is the capital? What kingdom north of it? What is its capital? What name is given to this coast? Where is Angola? What place in it? Where is Benguela, and what is its

ital? Where is Angoy? What mountains in Lower Guinea? What islands are there on the coast? Where is the River Zaire, and what is its size? Where is the Bembaroque? What country between this and South Africa?

COAST OF ZANGUEBAR.

What mountains are west of Zanguebar? What lake? What is the chief river known? What European fort is on it? Mention some of the principal kingdoms and cities on this coast. What islands are there on this coast?

ADEL, AJAN, BERBERA, AND MAGADOXA.

Where do these countries lie, and in what latitude? What are some of the principal places? What river is on the north, and what straits near?

NUBIA.

How is Nubia bounded? Where is Sennaar the capital? What is the chief place of Dongola? What port on the Red Sea? What celebrated resort of pilgrims is opposite to it in Asia?

ABYSSINIA.

How is Abyssinia bounded? What is the capital? What branches of the Nile rise in it? What river on the south? What lake? Where is Axum, the ancient capital? What place near it? What is the principal seaport north of Axum?

SOUDAN, OR NIGRITIA.

How is Nigritia bounded? What rivers has it? What lake? What mountains on the south? What kingdoms in the west? What are their capitals? What nations in the desert N. of Lake Tchad? What kingdom E. of Houssa, and what places?

SOUTH AFRICA.

How is the Colony of the Cape bounded? What is the Capital? What missionary station do you find? What river, mountains, and bays has it?

AFRICAN ISLANDS.

ISLANDS WEST OF AFRICA.

What are the principal islands among the Azores? What countries of Europe lie in the same latitude? What are the next islands, and what countries are opposite them? What are the chief islands next south of Madeira? What are the principal of the Cape Verde Isles? What small islands do you find on this part of the coast? What islands do you find between Cape Palmas and the Cape of Good Hope?

ISLANDS EAST OF AFRICA.

Near what coast of Africa is Madagascar? Where are Bourbon and Mauritius? What islands N. of Madagascar?

QUESTIONS ON THE MORAL AND POLITICAL CHART OF THE WORLD.

In which grand divisions of the world do we find Enlightened countries? Name the countries which are Enlightened in Europe. In North America. Is no part of South America yet Enlightened? What state of society prevails in South America? What other Civilized countries in the world? What parts of the Western Continent are in a Savage state? What of the Eastern? Is any part of Europe in the Savage state? What countries are Barbarous? Are any of the

countries of America Barbarous? What countries in the world are Half civilised? In which two grand divisions of the world are there no Half civilised countries?

Which quarter of the world has the greatest extent of country in a Savage state? Which has the least? What Islands are wholly Savage?

Which state of Society prevails over the greatest portion of the earth's surface? Which is next? Which the least?

What are the principal forms of government in the world? What countries of America have Republican governments? What one in Europe? Which countries of Europe have Monarchical or Imperial governments? Which in Asia? Which in Africa? Is there any of this kind in America? What countries in Europe have Limited monarchies? Are there none of this description in any other quarter of the world but Europe? What provinces in America are governed by a Viceroy? What in Asia? What one in Africa? Name the countries of Asia governed by independent Chiefs or Dukes? Of Africa? Of America? Are there any such in Europe? (*There are several in Germany and Italy not distinguished on the Chart.*)

In which grand division of the earth does the Christian religion prevail most extensively? Where can the Mahometan religion be found in Europe? Where does Christianity prevail next most extensively to Europe? In what part of North America does it prevail? What Christian country in Africa? What other country in Africa has a corrupt Christianity? Which grand division of the earth is mostly Pagan? What is the religion of New Holland? What country in Asia is Christian? Which are Mahometan? Are there any Mahometan countries in America? What Pagan country in Europe? What countries in Africa are Mahometan? Which are Pagan? Name the Pagan countries of Asia. Which religion is the most prevalent? Which least so?

In which grand division of the earth is the Greek Church found? In which two grand divisions do we find the Protestant Church? What form of the Christian religion exclusively prevails in South America? In what other grand division do we find Catholics? What Protestant country in Africa? What Catholic countries in North America? What is the religion of Ceylon in the East Indies? In what Pagan countries do we find Missionary stations? On what islands are Missions established? In which grand division of the earth are they most numerous? (*The Jews are scattered throughout most countries of the world in small numbers.*)

Which country of North America is the most populous? What is its present population? Of what nations is it composed? What country contains seven millions of inhabitants? What two millions? What is the whole population of North America, and of whom composed?

What country of South America contains five millions? Which two and a half to three millions? Which from one to one and a half millions? What is the population of the West India Isles?

Which country of Europe contains fifty-eight millions of inhabitants? What two thirty-two millions each? Which twenty-two? Which fourteen? What one contains about ten millions? What two, seven millions? What one six millions? Which three, four millions? Which contain from two to four millions? Which from one to two? Which less than one? What is the whole population of Europe? Of whom composed?

Which is the most populous country of Asia, and what is its population? Which is next? Which contains twenty-two millions? What two, fifteen millions? What one, fourteen millions? What five from eleven to twelve millions? What two, six or seven millions? Which has the least population? What is the whole population of Asia, and of whom is it composed?

What is the population of the East India Isles?

What country in Africa contains fourteen millions? What three contain four millions? (*The population of most countries of Africa is very uncertain.*) Which contain from one to three millions? What is the whole population of Africa supposed to be, and of whom composed?

What is the population of the whole world?

SYSTEM

OF

UNIVERSAL GEOGRAPHY.

INTRODUCTION.

GEOGRAPHY* is a description of the Earth and its inhabitants, and may be divided into Mathematical, Physical, Civil, and Statistical Geography.

1. MATHEMATICAL GEOGRAPHY is a description of the form, motions, and mathematical divisions of the earth, and the methods of representing its surface.

2. PHYSICAL GEOGRAPHY is a description of the structure and natural history of the Earth, including its natural divisions, climates, and productions.

3. CIVIL GEOGRAPHY is a description of the inhabitants of the Earth, including an account of their religion, government, knowledge, and arts.

4. STATISTICAL GEOGRAPHY is a description of states and empires, with their extent, population, and resources.

MATHEMATICAL GEOGRAPHY.

5. *The Earth appears to us** like a flat surface, bounded by the horizon. But in traversing the ocean, or an extensive plain, the highest part of a ship, or other object, although it be the smallest, is seen first, which could not be if the Earth were a flat surface. The boundary we imagined recedes before us, as it is in fact only the boundary of our view; and if we pursue one course steadily for 24,000 miles, we shall come again to the spot from which we set out. In this way it has been discovered that the Earth is a vast globe.

6. It is not, however, *exactly spherical*, but somewhat flattened at the poles. The diameter from north to south is about thirty miles less than from east to west.

7. On every side of the Earth we find a multitude of stars above us, most of which are called *fixed stars*, because they do not change their situation from age to age. About 1000 are

* The principal subject of each paragraph is pointed out by the words in capital or italic letters, from which *questions* may be formed; as, What is GEOGRAPHY? How does *the Earth appear to us?*

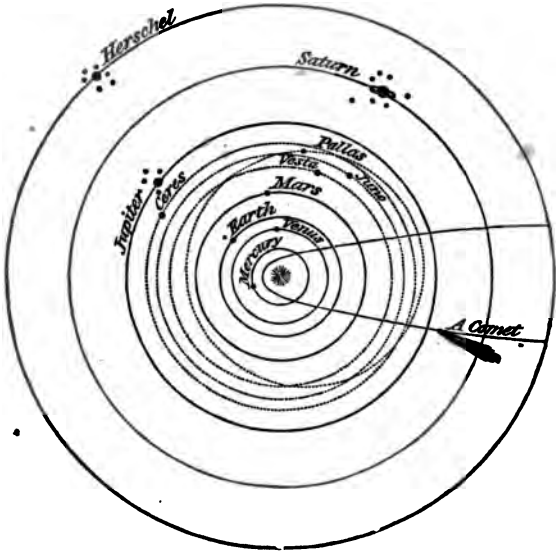
visible to the eye in a clear night; but by the use of telescopes, it has been discovered that there are several millions. They are at an immense distance from us; and are *supposed* by many to be suns, enlightening other worlds.

8. Scattered among these stars we find a *few* distinguished by their steady light, which change their place continually, returning at given periods in the same path. They are hence called *planets* or wandering stars: and when examined with telescopes, they are found to be globes, like our Earth.

9. On *farther examination*, it becomes evident that the Earth is also a planet, moving among the fixed stars; and all the planets are found to revolve round the Sun, at different distances, forming the solar system.

10. There are seven *primary planets* in our system, revolving round the Sun in the following order: 1. Mercury; 2. Venus; 3. The Earth; 4. Mars; 5. Jupiter; 6. Saturn; 7. Herschel, or the Georgium Sidus; as in the following figure:

(1.) *The Solar System.*



The *Sun* is an immense body, a million times larger than the Earth, and 95,000,000 of miles from us, communicating light and heat to the whole system. It is 883,000 miles in diameter, and turns on its axis in twenty-five days.

Mercury is the smallest planet, so near the sun that it is seldom seen. ***Venus*** is a bright star, nearly as large as the Earth. When it rises a short time before the sun, it is called the morning star; when it sets soon after the sun, the evening star. The *Earth* is about eight thousand miles in diameter, moving round the sun in one year, or 365 days 6 hours, at the rate of 68,000 miles an hour.

Mars is a planet much smaller than the Earth, of a red, fiery color, and visible to the naked eye. *Jupiter* is nearly 1500 times larger than the Earth, and the largest of all the planets. It is usually surrounded with cloudy belts. *Saturn* is 1000 times larger than the Earth. It is encircled by a broad, flat ring, divided into two portions, which revolve round it like satellites or moons. *Herschel*, the most distant of the planets, is 90 times as large as the Earth, but is seldom seen without a telescope.

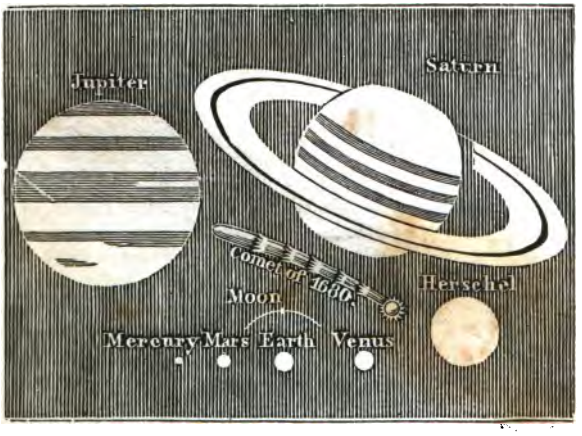
There are 18 ***secondary planets*** or moons, revolving round these primaries, of which the Earth has 1, Jupiter 4, Saturn 7, and Herschel 6. Our moon is only 2180 miles in diameter. It is 240,000 miles from the Earth, and revolves round it in 27 1-2 days.

Four very small planets, called *asteroids*,—Ceres, Pallas, Juno, and Vesta, have been discovered, revolving between the orbits of Mars and Jupiter.

Besides these, more than 400 *comets*, or stars with bright trains, have been seen revolving round the Sun.

The comets move irregularly, sometimes coming very near the Sun, and then flying off beyond the most distant planet. Only a few have been known to return, and at intervals of 75 to 100 or 200 years.

The following figures exhibit the usual appearance and comparative size of the planets.



(2.) ***Comparative size and appearance of the Planets.***

11. The revolution of the Earth round the Sun is called the ***annual*** or ***yearly revolution***, and causes the change of seasons. Its orbit, or path among the fixed stars, is called the *ecliptic*

12. Besides this revolution, the Earth rotates, or turns like a wheel, on its own axis, once in twenty-four hours; and as the Sun enlightens only one half the globe at once, each part is alternately in the light and shade. This motion causes day and night, and is called the *diurnal* or *daily revolution*. In consequence of the annual and diurnal motions of the Earth, the *Sun appears* to move round in the ecliptic every year, and to revolve round the Earth every day.

13. The *other planets* have similar revolutions, but in various times, as exhibited in the following table of their size, situation and motions.

	Diameter in Miles.	Distance from the Sun in miles.	Day, or rotation on axis.	Year, or revolution round the Sun.	Hourly motion in orbit.
			hrs. m.		
Mercury,	3,224	36,000,000	unknown.	3 months.	111,000
Venus,	7,687	68,000,000	23 20	7 do.	81,000
Earth,	7,928	96,000,000	23 56	12 do.	68,000
Mars,	4,189	144,000,000	24 39	23 do.	56,000
Jupiter,	89,170	491,000,000	9 55	12 years.	20,000
Saturn,	79,042	901,000,000	10 16	29 do.	22,000
Herschel,	35,112	1,800,000,000	unknown.	83 do.	15,000

MATHEMATICAL DIVISIONS OF THE EARTH.

14. In describing the Earth, it is convenient to draw a number of *imaginary lines*, or *circles* round it, in order to point out the situation of places, and the effects of the Earth's motions.

15. A *great circle* is one which divides the Earth into two equal parts or hemispheres. Others are termed *small circles*.

16. Every circle is divided into 360 *degrees*, (marked °,)—every degree into 60 geographical miles, or *minutes*, (marked ′,)—and every minute into sixty *seconds*, (marked ″.)

17. A *degree on a great circle* is about 69 English or common miles. On a small circle it is less, according to the situation.

18. The ends of the axis of the Earth, or line on which it is supposed to turn, are called the *north* and *south poles*. (*They are shown in figure* 4, *at N. and S.*)

19. At equal distances from the two poles, a great circle is supposed to be drawn, (at E in the figure,) which is called the *equator*. It divides the Earth into two equal hemispheres; the northern hemisphere, in which we live, and the southern. (*See this circle, and others mentioned hereafter, represented in the borders of the map of the world.*)

20. The *ecliptic*, or orbit of the Earth, crosses the equator, and extends 23° 28′ on each side of it. When the sun appears to reach this point, it *turns* again towards the equator.

21. Two circles are therefore drawn here, called *tropics*.* The northern is the *Tropic of Cancer*, the southern the *Tropic of Capricorn*.

22. When the sun is over either of the tropics, as in June and December, it shines 23° 28′ beyond one pole, and leaves the same space round the opposite pole in darkness. Hence the two *polar circles* are drawn at this distance, which include all places whose longest day is more than twenty-four hours. The northern is called the *Arctic Circle*, and the southern the *Antarctic*.

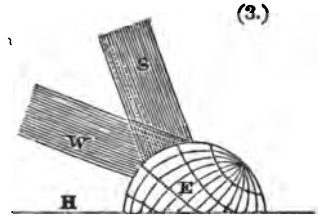
23. Distance north or south of the equator is called *latitude*, and is measured in degrees, on the meridians. At the poles it is 90°, which it cannot exceed.

24. The small circles drawn parallel to the equator are called *parallels of latitude*.

25. On the latitude of a place depends the *heat* of its climate, and the length of its *days*, as will be seen from the following remarks.

26. The Sun *heats* those parts of the Earth *most*, which are most directly exposed to its rays.

(3.)



Thus in the figure, when the Sun shines *directly* or *vertically* upon any part of the Earth, as at S, it is evident that more of the rays strike on the same spot, than when it shines *obliquely*, as at W.

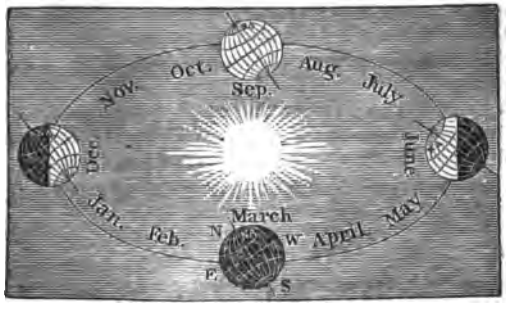
27. The *apparent path* of the Sun is immediately over that belt or zone of the Earth, which lies between the Tropics; and it is vertical to every place in it, twice every year. Hence this is the hottest part of the Earth, and is called the burning or *Torrid Zone*.

28. The rays of the sun strike most *obliquely* on those parts of the Earth which surround the poles. Hence the two zones within the polar circles, are the coldest parts of the Earth, and are called the *Frigid Zones*.

29. The two zones between the tropics and polar circles, are generally free from the extremes of heat and cold, and are called the *Temperate Zones*.

* From the Greek τρεπω, to *turn*.

SEASONS, DAYS, AND NIGHTS.



(4.) *The Earth in its orbit.*

30. The *north pole* of the Earth always *points* towards the north star in the heavens, and its axis is inclined to the ecliptic, as represented in the figure. This *gives rise* to the difference of seasons.

31. From *March to September*, the north pole is towards the Sun, and its rays fall most directly on the northern hemisphere, (*as at S in figure* 3,) producing summer. At the same time the south pole is turned away from the sun; it then shines obliquely on the southern hemisphere, and it is winter there.

32. From *September to March*, the south pole is presented more directly to the Sun; and the southern hemisphere is cheered with summer, while the northern is chilled with winter. In this way the two hemispheres always have opposite seasons.

33. The inclination of the Earth's axis to the ecliptic, also causes a *variety in the length of the days and nights* in different parts of the Earth.

34. At the *equator*, the days and nights are always twelve hours each, and the sun rises and sets at six o'clock throughout the year.

35. At the *period of the equinoxes*, (about the 20th of March and the 22d of September,) when the sun appears in the equator, the days and nights are equal in all parts of the world: but at other times, they vary in length according to the latitude and the season.

36. From *March to September*, *the northern hemisphere* is more than half enlightened, and the days are more than 12 hours long; and at the same time, the *southern* has less than 12 hours of light.

37. From *September to March*, it is less than half enlightened, and the days are less than 12 hours; while the southern hemisphere has the long days of summer.

38. In going from the *equator to the polar circles*, the days of summer are from 12 to 24 hours, increasing in length with the latitude.

39. From the *polar circles to the poles*, the days lengthen into weeks and months. In latitude 67°, the longest day is one month; in latitude 70°, two months; in latitude 80°, four months; and at the poles, there is six months light.

40. In the *opposite hemisphere*, or at the *opposite season*, the nights have the same length; the days are proportionally shortened; and the pole has six months darkness.

[41. *The length of the longest day or night for every ten degrees of latitude, is marked on the left hand margin of the Chart of the World.*]

LONGITUDE AND DIFFERENCE OF TIME.

42. A line drawn north and south through any place is called its *meridian*, or noon line, because the sun is always over it at noon; and if it is continued round the globe, it forms the circle called the meridian.

43. As the earth rotates on its axis from west to east, *the Sun appears to pass* over the meridians in succession, beginning at the east and going towards the west.

44. Of course *places east of us*, as in Europe, *have noon* before us. When we have noon, it is afternoon there; and all other hours vary in proportion. *Places on the same meridian* have noon at the same moment; *places west of us*, have their noon in our afternoon; and *places on the opposite side of the earth* have noon at our midnight.

45. The difference of time depends on the distance east or west from any meridian, which is called *longitude*. It received this name from the ancients, because they supposed the Earth to be longest from east to west.

46. *Longitude is generally reckoned* from the meridian of Greenwich or London, and is counted 180 degrees each way, on the equator or a parallel of latitude.

47. As the Earth rotates in 24 hours, the Sun passes over 15 degrees of longitude in an hour; and this difference of longitude causes a *difference of one hour* in time, as marked on the Chart of the World.

EXPLANATIONS,

Preparatory to the use of Maps.

48. *The most correct representation of the Earth's surface*, with the proportionate distance and size of its parts, is an artificial globe.

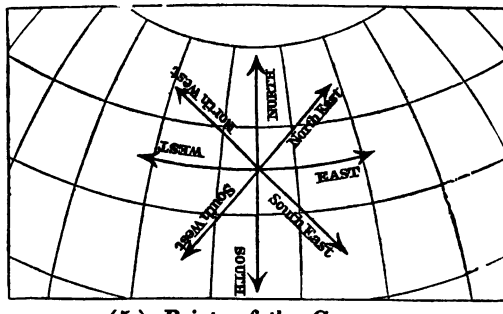
49. A *map* is a picture of the surface of the Earth, as it would appear to a person at some distance above it, on which the circles are usually represented by curved lines.

50. A *chart* is a representation of the surface of the Earth, as if it were spread out on a plane or level, used chiefly by mariners, in which the circles are represented by straight lines.

51. There are four *cardinal points* of the compass, north, south, east, and west; marked N.—S.—E.—W. Between these are *four other principal points:* north-east, south-east, north-west, south-west, marked N. E.—S. E.—N. W.—S. W. The mariner's compass is divided into 32 points.

52. On the *Earth*, east is that part of the heavens in which the Sun rises, and west, that part in which it sets. When we stand with our right hand to the east, the west is on our left, north before us, and south behind us.

53. On a *map* or *chart*, the upper part is always north—the bottom, south,—the right hand, east—and the left hand, west, as represented in the following figure.



(5.) *Points of the Compass.*

54. The *course* of a river is that point of the compass towards which the river runs. The *course* or *direction* of a place is that point of the compass towards which it lies from us or from some other place.

It should be remembered that *winds* are named according to the quarter from which they blow. A *river* running from north to south is said to *run south*. But a *wind* from north to south is called a *north wind*.

55. The various *parts of a country*, or division of the earth, are also named according to the points of the compass, the middle being called the interior; as in the figure below

North-western part.	Northern part.	North-eastern part.
Western part.	Interior, or Central part.	Eastern part.
South-western part.	Southern part.	South-eastern-part.

(6.) *Parts of a Country.*

56. The *lines* drawn north and south, or east and west, *upon the globe*, are *represented* by the curved lines on the map; and we may therefore trace the points of the compass in the same curve.

Thus on a map of the world, the Azores are south from Iceland, though they appear to be south-east; and Newfoundland is south-west, though it appears to be south. So Iceland is west from Norway, though it seems to be north-west.

57. *Latitude is marked* on the sides of a map; and *Longitude*, at the top and bottom, or on the Equator.

[*At the end of the Ancient Geography will be found an account of the method of constructing maps, together with problems on the globes.*]

PROBLEMS ON THE MAPS.

I. *To find the Latitude of a place.*

58. Trace a line from the place of which the latitude is required to one side of the map, following the course or curve of the parallels of latitude; the latitude will then be found marked in degrees.

Questions.—How do you find latitudes? What is the latitude of Newfoundland? Of Cuba? Of Cape Horn? Of Great Britain? Of the Cape of Good Hope?

II. *To find the Longitude of a place.*

59. Look to the top or bottom of the map, or on the equator, and find the degree opposite the given place, taking care to follow the course of the meridians.

Questions.—What is the longitude from London, of Philadelphia? What is that of Mexico—of the Sandwich Islands—of China, from the same place.

III. *To find the difference of time between any two places.*

60. On the Chart of the World, where the meridians are drawn every 15 degrees, count the number of meridians from one place to the other, and you will have the number of hours difference in their time.

If the first place is *east* of the second, the clocks of the first place are so many hours *before* those of the second; if *west*, so many hours *after* those of the second.

Questions.—What is the difference of time between Philadelphia and Mexico? What between Philadelphia and the Sandwich Islands, and China? What is the difference of time between London and Philadelphia? What between London and China? What between London and Egypt?

IV. *To find the length of the longest day or night in any place.*

61. On the Chart of the world, look at the latitude of the place on the left hand side of the map, and in the column of the longest days, the nearest figures will show you nearly the length of the longest day or night. Subtract this from 24 hours, and you have the length of the shortest day or night.

Questions.—What is the length of the longest day in Philadelphia? What is the longest day at the North Cape? In Gibraltar? At the Cape of Good Hope? At Cape Horn? In Mexico? What is the length of the longest night in Washington? In Canada? In Greenland?

PHYSICAL GEOGRAPHY.

NATURAL DIVISIONS OF THE EARTH,

WITH EXERCISES ON THE MAPS.

62. *The general form of the Earth* is that of a sphere, flattened at the poles; but the *surface* of its solid body is irregular. In some parts it is hollowed into deep cavities, which are filled with the waters of the *sea;* in others, it rises above the level of the water and forms *land*, whose surface is diversified by mountains and valleys.

63. *The greatest elevation of mountains* above the level of the ocean, does not exceed five miles, or one fourteen hundredth part of the whole diameter of the earth; and we have no reason to suppose that the depth of the valleys filled by the sea is greater. All these elevations and depressions therefore, although they appear vast to us, are too small in proportion to

the diameter of the earth to affect its general form. They *resemble* the roughness on the peel of an orange.

64. When we look upon a globe, or a map of the world, we see that *the greater part of the earth is covered* by a vast collection of water, surrounding numerous detached portions of land.

The water occupies one-half of the northern and nine-tenths of the southern hemisphere, or two thirds of the surface of the globe. The whole is called the *ocean* or *sea;* but for the sake of convenient reference, it is divided by imaginary lines, into various parts, which are called oceans, seas, bays, gulfs, &c according to their extent and situation.

THE LAND.

NATURAL DIVISIONS.

65. The two largest points of land not divided by water are called *continents;* one the Eastern and the other the Western Continent; because one lies east and the other west of the meridian of the Ferro Isles, from which longitude was formerly reckoned.

66. The smaller portions of land surrounded by water are called *islands.*

The *continents* are *really* vast islands, and it has been made a question among geographers, whether New Holland should not be called a continent. In this work it is classed among islands.

67. The *greater part of the land upon the globe* lies in the northern hemisphere; and the southern presents only a few peninsulas and islands, to interrupt the continuity of the water.

68. There is little appearance of regularity in *the situation and arrangement of the land* upon the globe. The two continents appear as if shattered by some great convulsion of nature, and the islands are scattered around them like fragments thrown off by the shock.

In some parts, the land extends into the sea, forming peninsulas, capes, and promontories; in others, it is indented and divided by the seas, gulfs, bays, and other branches of the ocean. Its *outline* is thus rendered very irregular. The situation and size of its *mountains*, *valleys*, *plains* and *rivers*, is marked with similar irregularity.

69. That part of the land which lies next to the sea is called the *shore* or *coast.*

70. A portion of the land projecting from the main land into the sea, is called a *peninsula.*

71. An *isthmus* is a neck of land which connects a peninsula with the main land.

72. A *cape* is the extremity of a peninsula, or point of land projecting into the sea. A high cape is called a *promontory*.

73. On account of the irregularities we have described, the *definitions of physical geography* do not admit of the accuracy which is found in many other sciences; and those who have given names to various geographical divisions of the land and water, have often applied terms without any regard to uniformity. In this, as in other sciences which relate to visible objects, *the imperfections of definitions and descriptions can be supplied only* by actual observation, or by a careful examination of correct maps of the outlines of countries, and drawings of the various objects described. It is also indispensable, according to the plan of this work, that before the student proceeds farther, he should become familiar with the use of the maps, and with the situation of seas, countries, mountains, rivers, &c. that he may be able to assign every fact stated in the following chapters to its proper place. The following questions and exercises will direct him in attaining this object, and a series more complete is inserted in the Atlas.

EXERCISES ON THE MAPS.

What are the northern and southern capes of the Eastern Continent? What peninsulas are there on the coast towards each of the cardinal points? What are the principal capes and peninsulas of the western continent? What great isthmus on each continent? What islands lie north of the eastern continent? What others are near the eastern coast? What islands on the south and west of this continent? Mention in the same manner the islands near the western continent? What are some of those lying far west of America?

ARTIFICIAL DIVISIONS.

74. The continents and islands of the earth are divided by geographers into several *Grand Divisions*, formerly termed quarters of the Globe.

75. The *Eastern Continent*, or Old World, is divided into *Europe*, *Asia* and *Africa;* and the Western Continent, or New World, into *North America*, and *South America*.

76. The numerous islands lying in the Pacific Ocean, and on its borders, between the two continents, are so little connected with either, and have so many points of resemblance to each other, that they may properly be styled the *Maritime World*, or OCEANICA.

77. They are formed into three principal divisions. The islands lying nearest to Asia extending to 10° south latitude,

and 130° east longitude, are called the *East India Islands*, or INDIAN ARCHIPELAGO. New-Holland and the adjacent islands, together with New-Zealand and the New-Hebrides, form the grand division of AUSTRALIA. The remaining islands, east of the Philippine Isles and New-Zealand, are classed together under the name of POLYNESIA.

78. Late discoveries render it probable that Greenland, and the neighboring regions, are not connected with either of the continents; and it is therefore proper to consider the *Arctic Regions* as distinct from the other grand divisions.

79. The grand divisions of the globe are divided by political boundaries, into smaller portions called *countries*, each of which usually contains men of one nation, speaking the same language. Countries are divided into *states* or *provinces*, containing *cities*, *towns* and *villages*. An *empire* is composed of many countries or states, united under one government.

The following sketch, together with the inspection of the maps, will give a general view of the chief political divisions of the globe.

80. EUROPE is the smallest of the four principal divisions formerly termed the quarters of the globe, but the most populous.

81. The extensive territory of the *Russian Empire* forms the Eastern half of Europe. *Northern Europe* is occupied by the northern part of Russia, and by the ancient Scandinavia, comprising Finland, Sweden, Norway, and Denmark.

82. The *South of Europe* consists of three projections or peninsulas; the most eastern of which contains Turkey and Greece; the middle is Italy; and the western is divided between Spain and Portugal.

83. In the *middle regions* of Europe, we find the Netherlands, and France upon the coast; the numerous states of Germany and the little republics of Switzerland, border upon these on the east; and the powerful states of Prussia, and Austria succeed, separating the rest of Europe from Russia.

84. *Near the western coast* are the isles which form the kingdom of Great Britain and Ireland—the land of our ancestors, and the only nation which speaks the same language with ourselves.

EXERCISES ON THE MAPS.

Describe the boundaries of Europe. Between what latitudes and longitudes does it lie? What capes and peninsulas has it? Mention the country occupying the eastern portion and its boundaries. What are the countries of Northern Europe? What are the boundaries of each? Give a similar account of

the countries in the South of Europe. Of those of the middle regions Of the islands near the western coast.

85. Asia is the largest of the grand divisions of the world. It was the first inhabited, and contains more than half the population of the globe.

86. The *northern division* of Asia is wholly occupied by the frozen regions of Siberia, or the Russian Empire in Asia. The *southern part* like that of Europe, is composed of three peninsulas; Arabia, India within the Ganges, or Hindoostan, and India beyond the Ganges or Chin-India; all celebrated in history, and well known in commerce.

87. The *middle region is occupied on the west* by the Turkish Empire, (including Asia Minor, Armenia, Syria, and the Holy Land,) and Eastern and Western Persia. *In the centre* are Independent and Chinese Tartary; and on the east, the vast and populous empire of China. *Near the eastern coast* is the insular empire of Japan, corresponding to Great Britain on the west of Europe.

EXERCISES ON THE MAPS.

What are the boundaries of Asia? What capes and peninsulas has it? Between what latitudes and longitudes does it lie? What country occupies the northern part? What are its boundaries? Mention the countries in the southern part. Describe the boundaries of each. Give a similar account of those of Western Asia—Of Central Asia—Of Eastern Asia. What islands lie near the eastern coast?

88. Africa is the third division of the world, in point of size, but is imperfectly known. Its population is generally thin. It is united to Asia by the isthmus of Suez.

89. The *northern projection* of Africa is occupied by the Barbary States, separated from the central parts by the great desert of Sahara.

90. In *Central Africa* are the negro kingdoms of Soudan or Nigritia, and the unknown regions south of it, often called Ethiopia.

91. In *Eastern Africa* are the celebrated ancient Egypt, the mountainous kingdom of Abyssinia, and the various states of Zanguebar; and on its coast is the large island of Madagascar.

92. *Western Africa* is occupied by the states of Senegambia bordering on the deserts; and Upper and Lower Guinea, or the Gulf of Guinea.

93. In *South Africa* is the unexplored country of the Hottentots; and the Colony of the Cape of Good Hope terminates the eastern continent on the south

EXERCISES ON THE MAPS.

Describe the boundaries of Africa. Its latitude and longitude. What capes and peninsulas has it? What countries occupy Northern Africa? What are the boundaries of each? Mention those of Central Africa and their boundaries. Describe in the same manner those of Eastern Africa—Of Western Africa—Of South Africa.

94. AMERICA was first made known to Europeans by Christopher Columbus, in 1492. Extending through the greater part of the northern and southern hemispheres, and embracing every variety of climate and productions found upon the globe, it has not improperly been styled the *New World*. It is the second of the grand divisions in size, but the least populous.

The new world is *divided* into North and South America, connected by the Isthmus of Darien. Between them are the West India Islands.

95. The *northern portions of North America*, from the great lakes to Barrow's Straits, are inhabited chiefly by savages; but are claimed by the British, and may be styled British America.

96. The *middle region*, from the Atlantic to the Pacific is occupied by the United States and their extensive territory.

97. The *southern part*, and the isthmus, form the republics of Mexico, and Guatemala or Central America.

98. On the *northern coast of South America* we find New Grenada and Venezuela, lately united in the republic of Columbia, and Guiana, which is divided between the Dutch, English, French, Spanish, and Portuguese.

The *eastern division* of South America forms the Portuguese empire of Brazil. On the *western coast* are Peru, Bolivia, and Chili.

99. The *southern extremity* is called Patagonia. The *inland portion* between Brazil and Chili, is occupied by the United Provinces of La Plata, Paraguay and Montevideo.

EXERCISES ON THE MAPS.

Describe the boundaries and extreme latitude and longitude of North America. What are its principal capes and peninsulas? Mention the countries with their boundaries in the northern portion—In the middle region—in the southern part.—Describe South America in the same manner.

100. OCEANICA OR THE MARITIME WORLD, was discovered later than America. It is inferior to the other divisions of the globe both in extent and population. Its inhabitants are generally savage or barbarous; and its political divisions are either unknown or of little importance.

EXERCISES ON THE MAPS.

What are the largest islands of the Indian Archipelago? Describe the situation of each. What are the largest of Australia? What are the principal islands of Polynesia south of the equator? What north of the equator?

GENERAL REMARKS.

101. In the examination of the maps it will be observed that the *direction of the two continents* is entirely different. The Eastern Continent extends principally from east to west: the Western from north to south.

102. The *greatest length* of the Eastern Continent in a straight line, is about 9000 miles, from the Cape of Good Hope to the north-eastern part of Siberia. The greatest length of the Western Continent, is about 7000 miles, from Beering's Straits to the mouth of the river La Plata.

103. The continents are singularly different in their *outlines*. The coasts of *Europe and Asia* are equally indented with bays, gulfs, and seas. *Africa* alone is destitute of these inlets. On the *Western Continent*, the eastern coast only is indented with bays, and the western coast has no inlets of importance except the Gulf of California, until we reach 48° north latitude.

104. In examining the map it will be seen that the *Eastern Continent* has two *principal projections* on the west—Europe and Africa. They are almost separated from the centre of the continent by seas and rivers. South America may be considered as the principal projection of the *Western Continent*, of which North America seems to form the main body. *Each of these divisions* has its own projections and peninsulas, in various directions. The situation of Africa and South America, in their connection with the main land, forms one point of resemblance between the two continents.

105. The only *example of uniformity* in the outlines of the continents, is the direction of their peninsulas. With the exception of Yucatan in Mexico, and Jutland, or Denmark, in Europe, all the principal peninsulas of both continents extend towards the south.

South America, California, Florida, Greenland, Sweden, and Norway, (which formed the ancient Scandinavia), Spain, Italy, Turkey, Africa, Arabia, Hindoostan, Chin-India, Corea, and Kamschatka, are all examples of this fact.

106. Both *continents terminate* in bold and lofty promontories, at Cape Horn and the Cape of Good Hope on the south, and the North Cape on the north.

THE SEA.

107. The waters of the globe are divided into *five great portions;* the Northern, the Southern, the Pacific, the Atlantic, and the Indian *Oceans;* each of which has various branches, extending into the land

108. The *Northern Ocean* is enclosed between the northern extremities of the two continents. It is connected with the Pacific Ocean by Beering's Straits about 40 miles in width; and with the Atlantic, by the sea or passage which separates Norway from Greenland. This ocean has usually been considered as *extending* about 3000 miles, from Beering's Straits to the Atlantic, and is supposed to be chiefly covered with ice. But even the coasts of Asia have been but partially explored, and we know little of the quantity of land it contains. The extent of Greenland is unknown; and the recent discoveries of British travellers, render it probable that there is a considerable tract of land west of this, which is not connected with North America.

109. The *Southern Ocean* lies round the south pole, extending to Cape Horn and the Cape of Good Hope. It forms an immense circular zone of water, embracing only a few bleak and desolate islands.

110. The *Pacific Ocean* lies on the west of America. It *extends* from Beering's Straits, about 8000 miles to the limits of the Southern Ocean; and from America to Asia, about 11,000 miles, or nearly half round the globe. It *contains* numerous clusters of islands, lying chiefly between the tropics.

111. The *Indian Ocean* is a branch of the Southern, extending into the Eastern Continent between Africa and New Holland. Its *extent* from east to west is from 3000 to 6000 miles, and from north to south, about 4000 miles. Between this ocean and the Pacific, are the Asiatic *islands*, and those which compose Australia. The whole of these are sometimes considered as belonging to one sea, termed the *Indian Archipelago.*

112. The *Atlantic Ocean*, lying on the east of America, is from 3000 to 4000 miles in breadth, between America and Europe; and 9000 in length from the Northern to the Southern Ocean. Between Norway and Greenland, the breadth is not more than 700 miles; between the capes of Africa and South America, it is about 1500.

113. When a considerable branch of the ocean is almost surrounded by land, it is called a *sea.* A sea, or portion of the ocean, which contains numerous islands, is called an *archipelago.*

114. A narrow passage of water into a sea, or between two portions of land, is called a *strait.*

115. A wider passage is called a *channel.* A *sound* is a channel which may be sounded.

116. When a part of the ocean runs up into the land, with a broad opening, it is called a *gulf* or *bay.*

117. A *harbor* is a small bay, where ships may anchor. A *road* is a place of anchorage on an open coast.

EXERCISES ON THE MAPS.

It will be useful to consider each of the oceans separately, and examine the branches and subdivisions which extend into the land around it. Thus it well be seen on examining the maps of the World, Europe and Africa, that the Atlantic Ocean extends into the Eastern Continent, forming the Gulf of Guinea, the Bay of Biscay and the Mediterranean, Irish, North, and Baltic Seas. These seas are connected with the ocean by straits and channels; and each spreads into other smaller branches, forming gulfs, bays and harbors. The following questions with the aid of the maps, will show their connections, and give more distinct and permanent ideas than a description.

Questions. Describe the situation of each of the great branches of the Atlantic on the eastern Continent. (*See the maps.*) Mention the passages leading to each. What branches has the Baltic Sea? The North Sea? The Irish Sea? What are the branches of the Mediterranean on the northern coast? What is the principal one on the southern coast? (*The eastern part of the Mediterranean is often called the Levant.*)

Describe the principal branches of the Atlantic in the northern part of North America. (*See map of North America.*) What are the two branches between North and South America? What are the passages leading to each? Mention the chief branches of Baffin's Bay. Of Hudson's Bay. Of the Gulf of Mexico. Of the Carribbean Sea.

What are the principal branches of the Atlantic, on the eastern coast of the United States? What are its principal branches on the coast of South America? (*See map of South America.*)

What Straits connect the Atlantic Ocean with the Pacific? What branches of the Pacific are there on the western coast of South America? What bays, sounds and gulfs on the western coast of North America?

What great branches of the Pacific on the eastern coast of Asia? (*See map of Asia.*)

What gulfs in the Chinese Sea? What passages connect the Pacific and Indian Oceans? What gulf penetrates the northern coast of New Holland?

What are the two great branches of the Indian Ocean, extending into Asia? What on the coast of Africa? What of the Arabian Sea?

SURFACE OF THE LAND.

118. The *surface of the land* may be considered under the two general divisions of highlands and lowlands.

The *highlands* are the highest parts of the earth, sometimes rising in the abrupt peaks and chains of *mountains*, and sometimes forming extended *plains*.

The *lowlands*, or less elevated portions of the land, are sometimes irregularly diversified with hills and valleys. The principal divisions are *plains* and *vales*.

119. *Mountains* are the highest prominences on the surface of the earth. They sometimes occur single; but they are generally united in *chains* or *ridges*, of various lengths and heights.

120. *Volcanoes* are mountains which send forth fire and smoke from their tops.

121. *Plains*, whether of the highlands or lowlands, are extensive, level tracts, which are not diversified with mountains

and valleys. In Asia they are called steppes. An elevated plain is called a *plateau* (pronounced *plat-toe*) or *table-land*.

122. *Deserts* are extensive plains, which are almost destitute of vegetation, and contain few springs or streams of water.

123. A body of water enclosed by the land is called a *lake*. A salt lake is sometimes called a *sea*, as the Caspian Sea, and the Sea of Aral in Asia.

124. *Rivers* are large streams of water, composed of numerous smaller streams or branches, and flowing from the mountains or highlands into the sea.

125. The place from which a river runs is called its *source;* and the place where it empties, its *mouth*. When the mouth of a river is broad, it is called an *estuary* or *frith*.

126. *Vales*, or river districts, are hollow tracts, bounded by hills, which are watered by a river.

127. A *basin* is a tract of country, embracing a large river and numerous branches, which drain off its waters, and includes a number of vales.

128. A *declivity* is a tract of land gradually descending from the highlands to the lowlands.

129. The highlands, lowlands, and declivities, form the *face of a country*, and often have much influence on its climate and fertility.

130. *Rivers usually descend* by the shortest course, from the highest to the lowest parts of a country. They sometimes pass through chains of mountains; but in general, the *highest parts of a country* are those from which its rivers rise; the lowest, those in which they empty; and the land usually declines in the direction from their sources to their mouths. Hence we may learn the face of a country by tracing the course of its rivers.

131. A number of declivities usually surround every large body of water, descending in different directions from the mountains.

Thus, in looking at a map of North America, it is evident from the course of the rivers falling into the Atlantic Ocean, that the declivity of the Atlantic states is towards the southeast. It is also evident, that there are declivities in different directions around Hudson's Bay. On the map of Europe, Spain will be seen to have several declivities; Italy two principal ones; and several may be observed around the Baltic Sea.

Let the student trace on the map the declivities of Spain—of Italy—of South America, &c.

EXERCISES ON THE MAPS.

Trace the rivers of the north of Asia, and find in what direction the land declines. What other declivities in Asia? Which appears to be the highest portion of Asia? Trace the declivities of North and South America in the same manner. Describe the declivities around the Baltic and Mediterranean Seas. Describe those of France and Italy.

STRUCTURE OF THE EARTH.

132. *The solid parts of the earth consist* of various substances, on whose nature the surface, soil, and waters of a country, and to some extent, even its climate, salubrity, and wealth depend.

133. The description of the structure of the earth, and the materials which compose it is called *Geology;* and some acquaintance with this subject is necessary to a complete knowledge of geography.

134. The perforations of *mines extend* about half a mile *in depth*, and we are acquainted only with the external layers or crust of the earth. But the same *minerals* which exist in some places *on the surface*, are found at the greatest depths yet examined, and are thrown out from the craters of volcanoes. It is therefore *probable*, that the great body of the earth is composed of similar materials.

135. So far as the *body of the earth* has been examined, it consists of various *strata*, or layers of rock, one above another, differing in their nature, extent, and depth. (*See Figure* 7.) Eighty strata of different kinds, have been found in a depth of 500 yards.

136. The *direction of the strata* is sometimes horizontal, sometimes inclined, and sometimes waving with the surface of the ground. When they are perpendicular, they are called *tables*.

The different strata of rocks resemble the different books in a pile; and a single stratum is sometimes divided into leaves or *laminæ*.

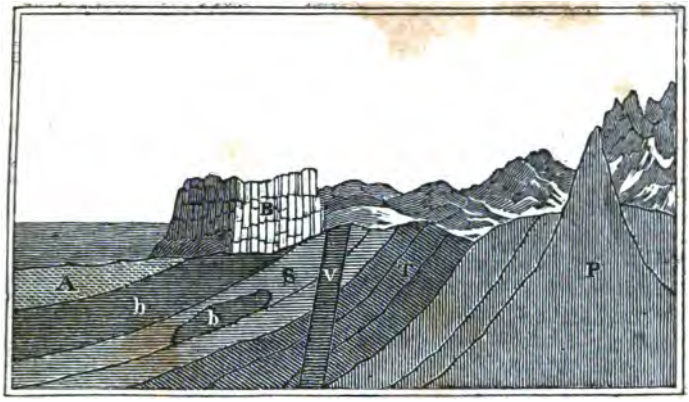
137. The strata of rocks are frequently separated by *clefts*, or seams. Sometimes these are open, forming *chasms* and *caves;* and sometimes filled with some other mineral.

138. When a cavity or seam which lies *between the strata*, is filled with another rock or mineral, as is often the case with coal, salt, &c., it is called a bed. If it runs *across the strata*, as is usually the fact with metallic ores, it is called a *vein*.

139. *Near the surface* of the earth, and often for some distance beneath it, we find rocks which contain the remains of land and marine animals, vegetables, and fragments of other rocks. It is hence concluded that they were formed after the existence of animals and vegetables, and they are called *secondary rocks*.

Sometimes whole mountains are formed of rocks chiefly composed of shells; as some among the Catskill mountains of New York, the Pyrenees, and many other chains. These remains are also found on the loftiest portions of the globe among the Alps and Andes.

140. *Beneath these rocks*, at different distances, we find another class which contain no such remains or fragments. They



(7.) *Strata of the Earth.*

P. Primary Strata; T. Transition; S. Secondary; A. Alluvial B. Basaltic; V. Vein; b. bed.

(8.) *Section of the earth between latitude* 40° *and* 45°.

extend to the greatest depths yet penetrated by man, and constitute every where the foundation on which other rocks rest. They also rise through all others, and form the loftiest mountains. It is therefore supposed that they were formed earliest, and they are called primitive, or *primary rocks*.

141. *Between the primary and secondary rocks*, are found others which partake of the nature of both classes. Sometimes they resemble primary rocks in appearance; *sometimes they contain* remains of shell fish, or the *zoophytes* of the ocean, which are intermediate between animals and plants; but they *seldom or never contain* remains of land animals, or vegetables, like the secondary rocks, or even of animals now inhabiting the seas. Hence they are called *transition rocks*, as forming the passage, or transition, from the primary to the secondary class.

142. *Above these strata*, we find soft and friable rocks and beds of sand, gravel, and soil, apparently composed of fragments of these which have been washed and rolled in water. They have hence been called alluvial strata. They are now divided into *tertiary*, *diluvial*, and *alluvial*.

The *tertiary* formation comprises the softer species of limestone, and other more recent strata, lying next to the secondary rocks. The *diluvial* consists of those beds of rocks, shells, gravel, &c. which appear to have been deposited by a general deluge. The *alluvial* strata, strictly so called, embrace only such beds as are formed by rivers, or other causes still in operation.

143. *All these formations are arranged* in strata, more or less regular. The accompanying section (Fig. 8.) shows the inequalities and formations, which we meet in going round the globe from east to west, but not the proportional height of the mountains. (*See* § 63).

144. The *primary strata* are perpendicular, or very much inclined to the horizon, and are represented at P. (Fig. 7).

145. The *transition rocks* (T), generally lie next to the primary strata, and on the sides of primary mountains in strata which are less inclined.

146. The *secondary strata* are usually horizontal, or nearly horizontal, and hence the upper strata are called *floetz* or flat rocks.

147. The *tertiary, diluvial and alluvial strata* usually take the form and direction of the surface on which they lie.

148. *Volcanic rocks* consist of the lava and other substances thrown out from volcanoes, and are formed in every period of the world. They lie above all other formations, and are usually divided into strata, each one composed of the lava of a single eruption.

149. Basaltic, or *trap rocks*, so called from their breaking

into a form like that of steps,* are also found in detached masses, (as at B,) lying above the regular strata of the earth, and are hence called *superincumbent rocks*.

150. *Rocks are classed* according to their situation among other strata, as well as their texture and character. Those are generally considered of the earliest formation which lie deepest.

Many which contain no organic remains, or visible fragments, are yet classed as secondary, because they occur in the place of secondary rocks, or belong to the same species of rock.

151. A *country is named* primary, transition, secondary, tertiary, diluvial, or alluvial, according to the nature of the formation which prevails in it, or constitutes its basis.

152. Most of the *rock masses* on the earth are *composed of* a few simple minerals, of which the principal are *quartz*, *mica*, *feldspar*, *limestone*, *gypsum*, or *plaster of Paris*, *slate*, and *hornblende*.

Quartz is a hard mineral which strikes fire with steel, often called white flint. *Mica* is found in bright scales, commonly called isinglass or Muscovy glass. *Feldspar* is a hard mineral, usually of a cloudy-white or red color, which decays easily, and forms the fine clay used for porcelain. *Limestone*, *gypsum*, and *slate*, are well known. *Sandstone*, which is often called *freestone*, appears like sand cemented and hardened, and is also a very common rock.

153. The only PRIMARY ROCKS which are found to any great extent, and which have never been seen containing any fragments of other rocks, or remains of animals and vegetables, are *granite*, *gneiss*, and *mica slate*, *primary clay slate* and one species of limestone, or marble.

154. Most of these rocks are *distinguished* by their granular and crystalline structure, (resembling that of loaf sugar,) which gives them a brilliant or glittering appearance.

155. *Granite*, *gneiss*, and *mica slate* are compound rocks. Granite and gneiss consist of quartz, mica, and feldspar, in different proportions or modes of arrangement; and mica slate of quartz and mica.

Granite is distinguished for its hardness and its massy structure. When it is divided into layers by the mica it is called *gneiss;* and when the mica forms the principal ingredient of the rock, and gives it a slaty structure, it is called *mica slate*. Gneiss and mica slate may frequently be divided into thin layers, like that of Bolton, Connecticut; and are then used for foot pavements.

156. These *granitic rocks* constitute the greater part of the rocky strata of the globe, so far as they have been examined. *They form* the highest mountain-peaks of the eastern continent and some of the most extensive and lofty mountain ranges on the globe; such as the Alps, the Atlas, the Himmaleh, and the Rocky Mountains.

Granitic rocks *also form* the centre of the Caucasus, the Cape of Good Hope, and Cape Horn—the Carpathian, Uralian, and Altaian Mountains, with their

* From the Swedish word *trappa*, a stair.

branches—the White Mountains, and a part of the Allegany Ridge of the United States.

In the lofty chains of *South America*, the granite is chiefly covered with other rocks. But it abounds in the low mountains, and even in the plains and coasts of Venezuela and Peru.

157. The *granitic rocks* are *distinguished* for their hardness, and form the most durable materials for architecture.

The *primitive limestone* is also valued as a building stone for its beauty; and is employed for statuary. It does not form so extensive ranges as granite.

158. *Primary countries* are usually the most rugged and unproductive. The edges of the strata appear on the surface, and render it rough and irregular. Mountains of granite are abrupt and broken; the declivities are very steep; the soil is liable to be washed away, and cultivation is generally laborious or impracticable; as in Norway and Switzerland.

159. When *gneiss* and *mica slate* are the principal rocks, as in many parts of New England, the declivities are more gentle, and the country less rugged.

160. The *materials* of primary rocks are so hard that they are not usually reduced to fine soil, nor are they easily dissolved in water. Hence they form a soil which is not well adapted to the production of vegetables.

161. The *rivers* of primary countries generally roll over rocky beds, full of obstructions, and rarely admit of any continued navigation.

162. Primary regions also have peculiar advantages. When they touch on the ocean, they form a bold and elevated *shore*, with deep water, and harbors free from shoals.

Sometimes a primary shore descends suddenly, in a uniform line, with a few bays or islands; as on the southern coast of Africa, and the western coast of America. But in other instances it is indented with numerous bays, and lined with rocky islands; as in Maine in the United States, and in Norway, Lapland, and Scotland.

163. Primary countries abound with fine springs of *water*, more free from impurities than those of any other formation. The *air* is also more pure and free from noxious exhalations; and the country is *generally* more healthy and favorable to human existence.

They are well adapted to the grazing of cattle and sheep; and often enrich their inhabitants in this way.

164. Primary rocks rarely contain *beds* of other minerals; but gneiss and mica slate often contain *veins* of valuable metallic ores.

165. TRANSITION ROCKS are the lowest which contain any remains of living beings. The principal are *limestone*, *sand-*

stone, and several species of *slate*. The structure is somewhat crystalline; but the grains are smaller and less brilliant than those of primary rocks, and it sometimes appears earthy.

166. *Transition countries* have something of the ruggedness and irregularity of the primary regions, which frequently render them unfavorable to agriculture.

167. For similar reasons, the *rivers* which flow through them are not generally navigable.

168. A large portion of the *transition rocks consist* principally of lime or clay, and they embrace some remains of animals and vegetables. For these reasons they are more easily destroyed, and dissolved by water; and form a *soil* very favorable to vegetation.

169. The *water* of transition countries is tolerably good, but not so pure as that of primary regions; often containing a small quantity of lime or salt.

170. The *transition rocks contain* few saline or inflammable minerals, and no beds of bituminous coal, salt, or gypsum. But they furnish excellent materials for architecture, and contain numerous metallic veins, not found in secondary strata.

171. The SECONDARY ROCKS which lie above the transition, generally have an earthy texture. The principal are *sandstone*, *limestone* of the earthy species, and *clay-slate*.

172. As the strata of secondary countries are chiefly horizontal, the *elevation* of the hills is seldom considerable, and the *declivities* are gradual and gentle.

173. Hence the soil is not easily washed away; they are capable of cultivation over the whole surface, and constitute the principal habitable portions of the globe.

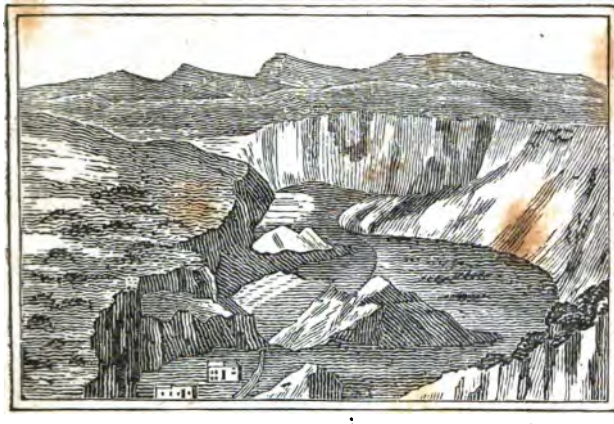
174. The *rivers* of secondary countries flow slowly, in deep channels, and the navigation is usually good, but sometimes obstructed by bars.

175. The *coasts* of secondary countries are formed by ranges of hills, gradually descending to the sea. The water deepens more slowly than on primary coasts, and the harbors are more liable to obstructions; but they are often more easy of access, and more safe on account of the regularity of the shore. Such is the character of the coast of England, and of southern Europe.

176. Most of the secondary rocks are easily reduced to *soil;* and a large portion of them are clay-slate, and calcareous, or lime rocks, abounding with animal and vegetable remains, which form a soil peculiarly favorable to vegetation.

177. *When sandstone and salt rocks predominate in this formation*, they produce barren soils. When they are *united*, as in Arabia and Africa, they check all vegetation, and reduce the country to a desert.

178. *Secondary rocks contain* few metallic ores; but they are the chief repositories of beds of coal, gypsum, and rock-salt, and contain extensive beds of iron ore—all of which are among the most useful treasures of the mineral kingdom. *Salt* and *iron stone* sometimes occur in *such masses* as to form mountains.



(9.) *Salt Hills of Cardona.*

At *Cardona*, near Montserrat, in Spain, is a valley surrounded by cliffs, and traversed by hills of solid salt, 600 feet high, which glitter in the sun like mountains of gems. Other mountains of salt are found in India.

179. The *springs* of secondary countries are seldom pure, almost always containing lime, especially in limestone countries, and usually some of the species of salts. In secondary countries, also, we find *mineral springs* most abundant; and it is only in these that *salt springs* are found.

180. *The upper strata* of the earth, *including the tertiary, diluvial, and alluvial*, consist of soft friable rocks, composed of lime shells and fragments of other rocks, and of beds of gravel, sand, clay, loam and mould. They appear to have been formed by the destruction of strata previously existing.

Loam is a mixture of clay and sand. *Mould* contains a large quantity of decayed vegetables, and forms the richest soil.

181. Sometimes the *strata of rocks are broken down* by storms, earthquakes, or other violent causes. Whole mountains have

been known to fall; and sometimes lakes or rivers swell and burst their boundaries, and change the face of the country.

In 1797, the peak of Sicalpa, in New Grenada, fell during an earthquake, and overwhelmed the city of Riobamba. Several instances of both facts have occurred in Switzerland, France, and other countries.

182. But *besides these sudden changes*, the high and rocky portions of the earth are gradually worn away by the operation of the weather. Peaks and abrupt precipices are reduced to rounded summits and gentle declivities, and the most *rugged regions* become habitable.

183. The *materials* of the mountains are carried by the rivers and torrents to the lower portions of the country, and are reduced to the rounded pebbles and fine sand or soil of alluvions.

184. *With these materials*, valleys are filled up, and uneven surfaces are levelled; bars and islands are often formed at the mouths of rivers; and large quantities are carried to the beds of the ocean, which are sometimes thrown up again on its shores.

185. It is evident that *extensive portions of the earth* have been formed in this manner, from the fact that the remains of shells and animals, and even whole forests, are found buried at a great depth below the surface. Such instances occur on the Atlantic coast of the United States, in England, Ireland, and many other countries.

New alluvions are constantly forming, particularly on the banks of rivers.

Thus, in the Connecticut River, and many others, it is very common to see a portion of land washed away from one side of the stream, while an equal portion is thrown up on the other.

186. *Besides these partial and limited alluvions*, the whole surface of the earth is covered with strata of gravel, sand, and clay, of a uniform appearance, which rise far above the present level of the waters. These could not have been formed by any cause less extensive than a universal deluge, like that recorded in the Scriptures; and hence they are called *diluvial strata*.

The *diluvial strata* are found containing the remains of animals now extinct, at the height of 16,000 feet on the Himmaleh Mountains, and 7,000 on the Andes. They also contain fragments of rocks found only in distant countries, which nothing but such a violent convulsion could have transported. The diluvial strata of England enclose such rocks as are not found in any country nearer than Norway; and immense blocks of Finland granite are scattered on the plains of Russia.*

187. The fragments and pebbles of *alluvions are sometimes hardened* into loose, friable rocks; and the beds of shells they contain are concreted into a similar rock, called *shell limestone*, which abounds in the southern United States.

* Buckland.

These, and some other portions of the alluvial strata, with the secondary rocks which lie next to them, constitute the *tertiary formation.*

188. The *surface* of alluvial countries is usually level, often entirely flat, and a little elevated above the sea. They are also free from rocks, and where the soil is fertile, are easily *cultivated.*

189. The *rivers* run smoothly over deep beds, and are navigable almost to their sources. But the *mouths* of the rivers and the *harbors* of an alluvial coast, are usually obstructed by bars and shoals, which render them difficult of access, and liable to be filled up by new alluvions.

190. *Alluvial coasts* ascend gradually from the ocean, sometimes rising in little hills from the water; as on the southern shore of the Baltic. In other cases, they form marshy flats, or sandy plains, called *downs*, which are liable to be overflowed by an irruption of the sea; as on the coasts of Holland, and the alluvial coast of North America. The waters on such coasts are shallow to a great distance from land; and the navigation is generally unsafe.

191. The *fertility* of an alluvion depends on the nature of the original rocks from which it is formed, and the manner in which it is deposited.

192. The alluvions of the hard *primitive rocks* are generally composed of sand or gravel, and are therefore barren and unproductive. The *sea and great lakes* throw up the same materials on their shores; and *rapid rivers* leave only this sterile deposit, the current conveying the finer particles to the ocean.

193. The barren regions of Siberia, and the deserts of Arabia, are *examples of sandy alluvions.* The *waters* are usually brackish in an extensive, dry alluvion; but often very pure, in other cases. The *air* is generally clear, dry, and healthy.

194. The alluvions formed from *transition* and *secondary rocks*, are generally rich, for reasons before stated; (§ 168. § 176.) and those of lime-stone rocks are especially so.

195. *Basaltic and volcanic rocks* also form rich alluvions Even the rugged, glassy lavas decay in the course of years, as is seen in the neighborhood of Mount Ætna and Vesuvius; and form a soil of extraordinary fertility, rendered still more productive by the heat of the volcanoes.

196. *River alluvions*, formed from streams which flow with a gentle current, or overflow their banks at certain seasons, generally consist of the finer particles of rocks, mingled with

the decayed remains of leaves and vegetables, and form a very rich soil. The *vales* of such streams are among the most fertile and beautiful regions on the globe.

The banks of the Mississippi and Connecticut rivers in the United States, and the Rhine, the Nile, and the Ganges, are fine examples. Not a pebble is found on the Ganges, for 400 miles from its mouth.

197. The *narrow valleys* of mountainous and rugged countries are peculiarly rich also; because they receive the fine particles of soil washed from the surrounding declivities.

198. *Rich alluvions abound in* the decayed remains of animals and vegetables, and in other substances easily dissolved by water. Hence they are peculiarly *adapted* to the nourishment of plants; but for the same reason, the *springs* are generally impure, and the exhalations often render the *air* very unhealthy.

199. They frequently form extensive marshes or swamps, as in the southern United States, which increases both these evils. The alluvial tracts near Rome, are infested with exhalations, termed the *malaria*, which render them almost uninhabitable.

200. The *sand* of alluvial strata, and the *clay* in the various forms of potters' clay, fullers' earth, ochre, &c., are mineral substances of the first importance for building, pottery, glass making, and other arts.

201. *Rich alluvions contain* extensive beds of bog iron-ore—of marl, or calcareous clay, which is used for manure—and of the peat or turf, composed of the fibres of vegetables, which forms an important fuel in Holland, some parts of Ireland, and other alluvial tracts destitute of forests.

202. *Sandy alluvions are usually* less productive in minerals; but in *Asia*, *Africa*, and *South America*, gold and precious stones are frequently mingled with them, which render them valuable for their mines.

203. The same causes which give rise to alluvions, render them peculiarly liable to *change*.

Those which are formed at the *mouths of rivers* in many cases, are continually extending into the sea by the accumulation of soil; as in the Nile, and the Mississippi.

The land at the mouth of the Mississippi is known to have extended; and is calculated to have advanced 15 miles during the last century. On the shores of France and Holland, places which were formerly harbors, are now at some distance inland. The coast at the mouth of the River Po, has advanced 42,000 feet since the year 1604, or 180 feet in a year.*

204. *Alluvial sands* are moved, and sometimes greatly extended, by the ocean and winds, particularly on low flat coasts;

* Cuvier.

as at Cape Henry, in Virginia, and in Ireland. In this way, also, the deserts of Persia and Africa are frequently enlarged.

At Cape Henry, trees are sometimes buried by the moving sands. In some parts of Ireland, houses and villages have been covered or surrounded by a desert of sand, during the last century, and the roofs still rise above the waste, in evidence of the change. A number of French villages on the Bay of Biscay have been overwhelmed in a similar manner. The sands of the African deserts have been carried by the winds into Egypt, and have overwhelmed many fertile regions and celebrated cities of antiquity.

This desolation can only be arrested by watering and cultivating the soil, that it may produce vegetation to protect it from the winds. A fertile region is often reduced to a desert, like the site of the ancient Babylon, when invasion or oppression leads a nation to neglect agriculture.

PLAINS AND DESERTS.

(10.) *Sand storm in the Desert.*

205. In some parts of the earth are found *plains* of several hundred miles in extent, which are almost always alluvial. In Russia and Siberia they are called *steppes*.

206. *Those which are moist*, or well watered, sometimes produce shrubs and trees. But often, the only vegetation is a coarse species of grass, which grows to the height of a man, and furnishes pasturage for vast herds of animals.

207. In North America, these are called *prairies* or *savannahs*. They are found in every part of the United States between the Allegany and the Rocky Mountains; some of small size, but others extending as far as the eye can reach.

Prairies of small extent are found in the western part of the State of New York. They are numerous in the states bordering on the Ohio and Mississippi rivers. At the distance of from 50 to 100 miles west of the Mississippi, a region of plains and prairies commences, which extends with little interruption, to the foot of the Rocky or Chippewan Mountains.

208. Savannahs are frequent in South America, where they are called *llanos* or *pampas*. They display a beautiful verdure in the rainy season; but in a time of drought they assume the appearance of deserts. Often, for 90 miles, there is not an elevation of one foot in height.

They are generally little elevated above the level of the sea, as may be seen in the Section of South America; (p. 68) and descend towards it, so that they have not the marshes and collections of water, so common in the steppes of Asia.

209. The *llanos* of *Venezuela*, extended 200 leagues along the Orinoco River, from its mouth to the foot of the Andes, and embrace its head waters, as far south as the Caqueta or Yupura River. The *pampas of Buenos Ayres* lie between the Paraguay River and the Andes, and feed vast herds of wild cattle.

Humboldt observes, "There is something awful, but sad and gloomy, in the uniform aspect of these steppes (of Venezuela). Every thing seems motionless —all around us, the plains seemed to ascend towards the sky; and the vast and profound solitude, appeared to our eyes like an ocean covered with verdure." The first aspect of the llanos excites scarcely less astonishment than the lofty peaks of the Andes.

210. In *Hungary* there is an extensive steppe of a similar character, between the rivers Danube and Theiss.

211. *On the seacoast of the United States*, south of New York, extensive plains are found, in which scarcely any thing but diminutive pines will flourish. They are called *pine barrens*, and are frequent on the coast of New-Jersey, Maryland, the Carolinas, and Georgia.

212. In the state of *Ohio*, there are also extensive tracts, which resemble prairies, except that they are more elevated and dry. They are called *barrens*, from being destitute of timber. They are free from stones, and sufficiently fertile; but the want of materials for building is a great obstacle to their settlement.

213. The *peat moors* of Great Britain are plains of several miles in extent, of a brown color. Not a tree or shrub is to be seen, nor a spot of grass to relieve the eye. The soil, however, is wet and spongy, and is scarcely passable, except in the driest seasons, or when hardened by frost.

214. Many countries are covered with extensive *desert plains*, which are destitute of all vegetation, except in small insulated spots, anciently called *oases*.

215. Immense deserts form the most striking feature of Africa, Persia, and Arabia. *The most remarkable known* is the Saha-

:a of Africa, a vast ocean of burning sand, 2000 or 3000 miles long, and 700 broad, with fertile spots, like islands, scattered here and there.

Arabia is chiefly covered with deserts, interspersed with a few fertile spots. In Persia are two principal deserts, which occupy a large part of the country. The Great Salt Desert is 700 miles in length.

That part of Hindoostan, also, which lies between the Indus and the branches of the Ganges, is principally a desert, although not so desolate as those which have been described.

216. In most deserts, nothing *appears in view*, but a level expanse of sand, bounded by the horizon, which is perpetually moving with the wind, or rolling in waves like the ocean.

In a few hours, hills of some height are formed. There are no permanent mountains or hills, no trees or villages, to serve as landmarks to the traveller. He must be guided entirely by the compass or the stars. He is obliged to carry water as well as food; for it is only at great, and often at uncertain distances, that he can hope to meet with a single spring or rivulet.

217. The *fine sands* of the desert often float in the air, like vapor, and produce great inflammation of the eyes and mouth, and the most parching thirst. Sometimes they are raised by whirlwinds into *storms;* or in vast *columns*, whose tops are out of view.

From 10 to 40 of these columns have been seen at once by travellers; apparently from 3 to 60 feet in diameter, and moving with a swiftness which renders it impossible to escape them, if they are coming towards you.*

218. In the deserts of Asia, Africa, and America, travellers often meet with an optical deception, called the *shurab* or *mirage*. It is a haze or mist, which seems like a clear, still lake, reflecting the image of distant mountains, hills, or clouds, like water, and often mocking the hopes of the fainting traveller. The same appearance has been noticed by Humboldt, in the steppes of Hungary.

219. The great sandy *Desert of Cobi*, or Shamo, in Asia, is the most elevated, of any extent, upon the globe. This circumstance, and its northern latitude, preserves it from the scorching heats of more southern deserts; but it is equally destitute of water, and camels only can be used in crossing it.

220. *Russia and Siberia* abound with vast plains, which are indiscriminately called *steppes*. Some of them are deserts; some are marshes; and some are savannahs; but most of them are incapable of cultivation, either from the excess of drought, or moisture, or the abundance of salt.

221. One of the most remarkable tracts of this sort, is that

* Bruce's and Pottinger's Travels.

which lies *north of the Caspian Sea*, extending from the river Don to the Irtish. It consists of vast plains of sand, resembling the bed of the sea; which are covered with marine shells, and abound with pools of salt water.

222. *In North America*, between the Platte River, and the head waters of the Colorado and Sabine Rivers, there is an extensive desert tract, which has been called the Great American Desert, stretching from the Ozark Mountains to the Chippewan. Indeed it extends along the base of the Chippewan Mountains, from north to south, as far as we have any acquaintance with that range, with an average width of 400 or 500 miles.

It is divided from north to south by a range of sandstone hills. The eastern portion is covered with a fine sand, with scarcely a rock or stone; and is rendered in some measure productive, by the accumulation of animal and vegetable remains.

223. *In that portion which is traversed by the Platte River*, it has a strong resemblance to the barren steppes of Asia. The soil and rocks are saline; and incrustations of salt often appear on the surface. The plants are such as are usually found in saline tracts. Trees and forests are almost unknown. This waste is scorched in summer by the rays of the sun, and chilled in winter by freezing winds from the mountains.

The mirage was here seen distinctly, by the members of the late American expedition.* The vapors were so dense that every valley upon which they looked down, appeared to contain a pool of water. A herd of bisons at a mile distance, seemed to be standing in water; and their reflected images were seen as distinctly as the animals.

224. The only part of *South America* resembling the deserts of the eastern continent, is said by Humboldt to be the desert of Atacama, south of Peru. No drop of rain ever falls upon it. It contains rich mines of rock salt.

* Under Major Long. See Long's Journal.

MOUNTAINS.

(11.) *Chimborazo.*

225. MOUNTAINS *sometimes occur insulated*, rising suddenly from a level country. The Rock of Gibraltar, so celebrated for its fortress, rises in this manner 1500 feet on the level beach of the Mediterranean Sea; and similar *examples* are found in other places.

226. But mountains *are generally united in groups or chains*, which traverse a great extent of country. Sometimes several chains issue from a central mountain or ridge, as in the Alps; sometimes they form a number of irregular groups, as in Asia Minor, and Persia. The great American chain is the only one which extends thousands of miles in a single line.

227. The following table shows the *length* of the principal chains of mountains, according to the best accounts.

	Miles.		*Miles.*
The Andes, - - - -	4500	Dofrafield Mountains, - -	1000
Mexican and Rocky Mountains,	7000	Olonetz Mountains, - -	
Whole American chain, - -	11,500	Allegany Mountains, - -	900
Altaian Mountains, - -	5000	The Alps, - - -	600 to 700
Mts. of the Moon, probably -	2000	The Appenines, - -	
Ural Mountains, - - -	1500	Carpathian Mountains, - -	500
Mt. Atlas, - - - -		Green Mountains, - -	350
		The Pyrenees, - - -	200

228. The great mountain chains of each continent seem to be connected, more or less distinctly, and to form a boundary to the ocean.

229. We find the *Pacific Ocean* locked in on the east by the immense uninterrupted chain of America, comprising the Andes, the Mexican Cordilleras, and the Chippewan Mountains, and embracing some of the highest summits on the globe. It generally reaches to the coast; but in some parts retires a little into the interior. On the *opposite side*, we find the great Asiatic chain, extending from Beering's Straits to Hindoostan and Persia; and apparently connected by the mountains of Arabia, with the chains of Eastern Africa, which terminate at the Cape of Good Hope.

If we suppose ourselves standing on New Holland, we shall find the principal mountain chains of the globe, arranged round us in one vast arch, or single chain; embracing the immense basin of the Pacific and Indian Oceans, and combining both continents in one system.

230. In the *Southern Atlantic Ocean*, a similar boundary appears to be formed by the high mountainous shores of South America on the west; and on the east by the chain which is seen from the coast of Lower Guinea, connected with the mountains of South Africa and Upper Guinea.

231. The *North Atlantic* is hemmed in by the Allegany, or Apalachian range, connected with the mountains of New Hampshire and Maine on the west; and the chains of Norway, Germany, France, and Spain, form a similar limit, with few interruptions on the east.

232. The broad *alluvial tracts*, which lie between these ranges and the sea, abound in shells, and other marine relics, which show that the ocean once extended to the foot of the mountains.

233. The *declivities* of mountains are sometimes long and gentle, and sometimes sudden and precipitous. Most mountains have a rapid declivity on one side, (usually towards the sea), and a more gradual descent on the other; as the Andes and Alps.

234. A declivity is sometimes so gradual as to form a *table-land*, whose waters flow into the ocean; like that of the Gauts of India, and of Mexico.

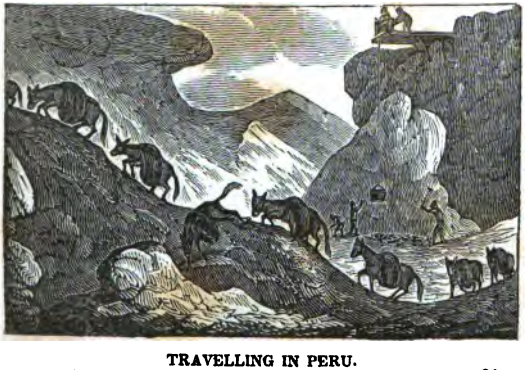
235. In *other cases*, table-lands preserve the same level to a great extent, like that of Tartary, containing their own system of mountains and rivers.

These expansions of mountains are found in Europe, of small size; but in Asia, Africa, and South America, they form tracts of great extent.

236. The *valleys* or depressions which separate mountains, assume various forms; and sometimes every projection on one side is so fitted to a cavity in the other, that they appear

MOUNT ST. ELIAS.

CITY OF LIMA, AND THE ANDES.



TRAVELLING IN PERU.

P. 34.

RIO JANEIRO.

BRIDGES IN CHILI.

CATTSKILL MOUNTAIN HOUSE.

as if produced by a division of the mountain. Such instances frequently occur in the Alps, the Pyrenees, and other chains.

237. The *valleys of lowland regions*, are not usually definite in their form, and gradually descend into the plains around them; but those *of elevated regions* are usually enclosed by mountains.

238. They are generally long and narrow; some, however, are round like the basin of a lake; as those of Bohemia and Cashmere.

Such valleys often contain lakes, and a set of rivers which have no other outlet. This is the fact with the Lake of Titicaca in South America; the Sea of Aral in Asia; and many small lakes in other countries.

239. *Passes or defiles* are narrow valleys which pass through chains of mountains, and are often the scenes of battles; as the celebrated pass of Issus, in Asia Minor, and the Straits of Thermopylæ, in Greece.

240. These openings are *also termed* the *gates* of the country. Such are the gates of the Caucasus, and the gates of the Caspian, which form the only passages to Asia, between the Black and Caspian seas. In the United States, they are usually termed *gaps* or *notches*. In many instances they are mere chasms of great depth, with perpendicular sides; as among the White Mountains.

The principal pass in the White Mountains is "The Notch," which seems to cleave the group to its base. It extends for two miles, between lofty walls of rocks, in one part only 22 feet distant from each other; and presents every where a striking assemblage of rocky ruins.

241. The Andes abound in chasms of a similar kind, called *quebradas*, some of which are nearly a mile in depth. They render travelling dangerous, and are crossed only by bridges of ropes.

242. Sometimes *a defile forms the passage of a river*, and presents a scene of striking grandeur; as in the passage of the Potomac through the Blue Ridge, and the Missouri through the Rocky Mountains.

Such also is the passage of the Susquehannah through the water-gap of the Blue Ridge; and of the Hudson River through the high precipitous mountains, called The Palisadoes. The gates of the Rocky Mountains, which form the passage for the Missouri, present a sublime spectacle. The river is only 450 feet broad, and runs for nearly six miles between overhanging precipices, 1200 feet in height.

243. It is the opinion of the most celebrated naturalists, that the chasms and valleys of the earth, could not have been produced by any cause now in operation. Such immense and extensive changes can only be ascribed to a universal deluge.*

244. The chasm which forms the channel of a river, is sometimes covered with a portion of the rock, which was not remo-

* See Brogniart—Buckland, &c.

ed by the convulsions that seem to have produced it, and forms a *natural bridge*.

245. *The most celebrated* curiosity of this kind, is the bridge which passes over Cedar Creek, in Rockbridge, Virginia. It consists of a lofty arch of rock, covered with earth and trees, passing across the chasm, at the height of 210 feet above the water.

The bridge is about 65 feet wide, and 40 in thickness. "The view from below is as delightful, as that from above is painful. The arch seems to spring almost to the sky; and no scene of nature can produce higher emotions of the sublime."*

In Scott County, Virginia, there is a similar bridge, 1000 feet long, and 300 high; and in Berkshire County, Massachusetts, is one 60 feet high.

246. At *Icononzo*, in South America, on the route from Santa Fe de Bogota to Popayan, there are two remarkable bridges of this kind, 300 feet high. They cross an immense chasm, forming the bed of a torrent which could scarcely have been passed in any other way. Two others exist in Mexico.

247. An appearance not unlike that of a natural bridge, is presented by *mountains which are pierced* by a cavity passing through them.

Mt. Torghat in Norway is thus pierced by a cavity 180 feet in height; and 3000 in length. A rock near New Zealand, and the Doreholm, in the isles of Scotland, are pierced in the same manner by an arch through which the sea passes.

248. Mountains assume a great variety of *forms*, according to the rocks of which they are composed. Sometimes they rise like a dome or a bell, and sometimes shoot up in a form which gives them the name of *needles*. Chains are frequently diversified with numerous pointed peaks, which have led the Spaniards to give them the name of *sierra*, or saw.

249. *Volcanic peaks* are generally distinguished by their regular conical form, produced by the materials thrown out from the top; as in Etna, and the Peak of Teneriffe.

250. *Mountains of granite*, of which the Alps and Norwegian Mountains furnish striking examples, are usually broken into rugged lofty peaks, abounding with steep cliffs. The valleys are in general, deep and narrow, and often bounded by precipices.

The Table Mountains,—one in South Carolina, and one at the Cape of Good Hope,—are striking examples of precipices of granite. The latter is 3500 feet high

251. Mountains composed of *stratified rocks*, such as gneiss, mica slate, and clay slate, are less rugged. In passing through the transition to the secondary class, they become smooth and

* Jefferson's Notes.

round-backed; and in the secondary regions, are reduced to gentle swells and valleys, which appear like the waves of the sea.

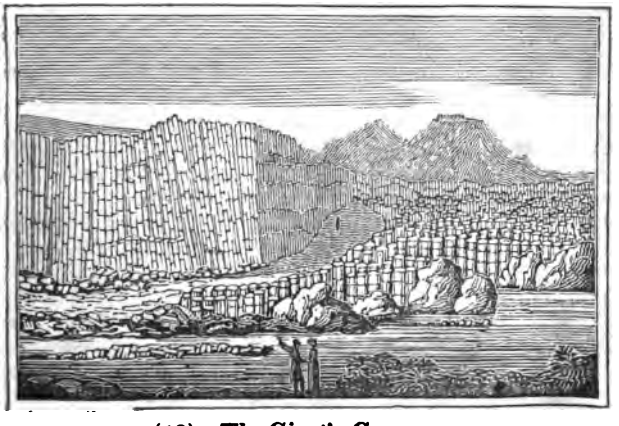
252. *Limestone* of the transition and secondary formations, is marked by deep valleys, and numerous chasms and caves, and often presents rough cliffs and precipices. The *upper* or *flœtz limestone* usually forms extensive tracts of flat country.

Kentucky and Tennessee furnish examples of these appearances. The chasms are so numerous in some parts, that they often absorb the waters of springs and streams and produce a drought.

253. *Mountains of sandstone* are seldom of any great height; and as this rock easily decays, they present a great variety of forms. In the uppermost *sandstone*, the valleys are deep and romantic; the hills conical, steep, and abounding in cliffs; and it often presents grand pillars and colossal masses, which form the most striking rocky scenes.

In some instances, they appear at a little distance like a city in ruins, as in several parts of Africa, and on the banks of the river Volga; and they have sometimes been described as such. The Castle Rock, observed by Major Long, near the Rocky Mountains, has a similar appearance.

254. *Mountains of trap rocks* are composed of columns of five or six sides, divided into joints, which are closely united to each other, and appear like a solid honeycomb. They present high precipices, which often have the regularity of walls constructed by art. A mass of fragments generally lies at the base; and the whole appears like the ruins of immense towers or castles.



(12) *The Giant's Causeway.*

255. Striking examples of this formation are seen in the basaltic rocks, on the northern coast of Ireland, of which the *Giant's Causeway* is the most celebrated. It consists of three piers of columns, extending several hundred feet into the sea, whose tops present a level pavement of stone.

The columns rarely exceed 30 feet in height. More striking appearances are found in other parts of this basaltic range, which extends along the coast 40 miles in length, and 20 in breadth. The two most remarkable points are the promontories of *Fairhead* and *Bengore*. They consist of similar ranges of columns, rising 150 feet perpendicularly at Fairhead, and at Bengore 400 feet.

256. The *Hebrides*, or Western Isles of Scotland, present similar examples of basaltic columns; and those of a less perfect kind are found in the *United States*, in the Palisadoe Rocks of the Hudson River—at East and West Rock, near New-Haven, in Connecticut—at Mount Holyoke, near Northampton, and other places in the range of mountains extending north from these bluffs.

257. The *height* of mountains of *trap* is generally small; but in South America, these rocks cover some of the highest peaks of the Andes.

It is remarkable, that Chimborazo and Antisana, are crowned by immense walls of porphyry; a rock allied to trap, rising to the height of 6,000 or 7,000 feet; and basalt, which has never been observed higher than 4,000 feet in Europe, rears its castled precipices on the top of Pichinca, 18,000 feet above the level of the sea.

258. The *elevation of mountains produces a great effect on the air.* As we rise above the level of the sea, it becomes more rarefied. At any considerable height, the difference is so great that breathing becomes difficult, and all efforts laborious; and the blood often starts from the eyes and lips.

The change is so regular and gradual, that a traveller may determine the height of the spot on which he is, by means of the barometer, an instrument which measures the pressure of the air. The elevation of mountains is usually determined in this manner.

259. At the height of two or three miles the *air becomes so dry*, as to produce the most distressing thirst. The traveller finds himself elevated above the region of clouds and storms; and often sees them roll and burst beneath him.

260. The *heat* also diminishes rapidly in ascending mountains. At the height of two and a half miles above the sea, in latitude 40 degrees, and three miles at the equator, the cold is so intense, that every trace of animal *life is extinct.* All above is the abode of silence and desolation. At this height, snow and ice continue through the year; and hence the peaks of the Andes, the Alps, and other lofty mountains, are whitened with *perpetual snow.*

261. The elevation of *table lands* produces the same effects on the air and climate as in mountains; and the distinctions of

latitudes and zones are often lost, over a great extent of country thus elevated.

262. The *habitations of men* are rarely found in Europe above the height of 6,500 feet; and the highest inhabited spot is the monastery of St. Bernard, 8,000 feet above the sea. But in the Torrid Zone of South America, we find large cities, such as Quito and Santa Fé de Bogota, at this height. Considerable settlements, such as the town of Guanca Velica, in Peru, are still higher; and the single farm house of Antisana, in New Grenada, is 13,500 feet above the sea.

263. Immediately below the region of perpetual snow, we find in the plains and valleys of lofty mountains, those vast lakes of ice called *glaciers*. They are formed by the alternate melting and freezing of the snow, in the various seasons; and therefore occur chiefly in the Temperate and Frigid Zones. They are found of the *greatest extent* and magnificence among the Alps.

These mountains contain not less than 400 glaciers. They are of various sizes, but frequently extend 16 or 18 miles in length, and the total area of their surface is estimated at 1000 square miles. They are from 100 to 600 feet in depth.

264. The *surface of the glaciers*, is in some cases, smooth and unbroken, and presents an immense mirror of ice. In others, they are broken with waves, and appear like the sea congealed in the midst of a tempest. In many instances, they are crossed by deep chasms, and adorned with pinnacles of ice, rising in various forms, appearing like the spires and turrets of a city of crystal.

265. Glaciers also occur in the highest parts of the *Pyrenees*; and the coasts and mountains of *Norway*, *Lapland*, and *Spitzbergen*, present scenes of desolation of this kind, whose magnificence is beyond description.

266. Vast masses frequently break off from the snows and glaciers of lofty mountains, and roll into the valleys with a tremendous roar. In Switzerland, houses, and even villages, have been buried by these falling masses of snow and ice, which are called *avalanches*.

267. At first view, the rugged mountain ranges of the globe appear like deformities on its surface. But they are found to *serve important purposes*, by the care of HIM who made them.

268. They collect and condense the clouds and vapors, and thus supply the springs and streams which fertilize the earth. The loftiest are covered with perpetual snows, even in the Torrid Zone; and thus serve to cool and equalize the temperature of these burning regions, while they furnish inexhaustible reservoirs for the supply of water. They also arrest the progress

of the winds, and cause a variety of currents in the atmosphere, by which every part of it is put in motion, and thus preserved pure and salubrious.

The numberless varieties in the form and aspect of mountains, diversify the surface of the earth, and furnish every species of grand and beautiful scenery. A particular description of the peaks, and precipices, and chasms, which have excited the admiration of travellers, would form a volume of itself.

CLASSIFICATION OF MOUNTAINS.

269. *Mountains may be arranged* according to their height, in twelve classes, as exhibited in the following table, and in the "Comparative View of Mountains," which is placed as the frontispiece to this volume.

Class.		*Height.*		*Example.*
I.	*about* 5 *miles, or*	27,000	*feet,*	Himmaleh Mts.
II.	" 4 "	21,000	"	The Andes.
III.	" 3½ "	18,000	"	Popocatapetl.
IV.	" 3 "	15,000	"	Mt. Blanc.
V.	" 2½ "	13,000	"	Teneriffe.
VI.	" 2 "	10,000	"	Mt. Etna.
VII.	" 1½ "	8,000	"	Mexico.
VIII.	" 1 "	5,000	"	Mt. Heckla.
IX.	" ¾ "	3,000	"	Mt. Vesuvius.
X.	" ½ "	2,500	"	Allegany Mts.
XI.	" ¼ "	1,500	"	Mt. Tom.
XII.	" ⅛ "	1,000	"	Mt. Holyoke.

270. The following table contains the principal mountains on the globe, arranged in their classes, with their estimated height in feet.

It will be observed, that where a chain is mentioned, as the Himmaleh, &c. the highest point is set down. Those in Italic belong to the Western Continent.

HEIGHT OF MOUNTAINS.

FIRST CLASS.	Feet.
Himmaleh Mts.	
——— Da wa la ge'ri	27,677
SECOND CLASS.	
Him'ma leh Mts.	
——— 2d peak	25,659
——— 13th peak	22,217
The Andes	
Chim bo ra'zo	21,440
Man'flos (Chili)	20,000
Chil'lan	
THIRD CLASS.	
Volcano Co to paz'i	18,000
Mou na Ka'ah (Owyhee)	

Third Class continued.	
El bu'rus, Caucasus	17,000
Mt. Elias	
V. Orizaba	
V. Po po cat a petl	
FOURTH CLASS.	
V. Pi chin'ca	15,000
Mt. Blanc, Alps	
Mt. Ro'sa do.	
Geesh (Abyssinia)	
Egmont (New Zealand)	
Hamar (Chin. Tartary)	
FIFTH CLASS.	
Mt. Fair'weather	14,900

Fifth Class continued.

	Feet.
Mt. O'phir (Sumatra)	13,000
Mt. At'las	
Peak of Teneriffe	12,200
Rocky Mts.	
Highest Peak	12,500

SIXTH CLASS.

Si er'ra Ne va'da (Spain)	11,800
James' Peak	11,500
Per du', Pyrenees	11,000
Mt. Et'na	
Al tai'an Mts.	10,000
Snow Mts. (Africa)	
Mt. Cen is', Alps	
Volcano of Bourbon	

SEVENTH CLASS.

City of Qui'to	9,500
Mt. Ar a rat	
Leb a non	
St. Goth'ard, Alps	9,000
Ve li'no, Appenines	8,000
Lom nitz, Car pa'thi an	
V. Du'i da (Guiana)	
Mts. of Gon'dar	
Dof'ra field Mts.	

EIGHTH CLASS.

Blue Mts. (Jamaica)	7,000
City of Mexico	
City of Pu eb'la	
Pi'co (Azores)	
White Mts.	
——— *Washington*	6,634

Eighth Class continued.

	Feet.
Ce vennes', Sansi	6,800
O lym'pus (Turkey)	6,000
Blaa serk (Greenland)	
Mt. Hec'la	5,000
Mt. I'da (Turkey)	

NINTH CLASS.

Moose hil'lock (N. Hampshire)	4,500
Ben Nev'is (Scotland)	4,300
Sad dle Mtn. (Massachusetts)	4,000
Green Mts.	
——— *Mansfield*	
Cairn go'rum (Scotland)	
Gauts (Hindoostan)	
Table Mtn. (S. Carolina)	
Olt'er Peak (Virginia)	3,900
Cats'kill Mts. (N. York)	
——— *Round Top*	3,800
Mt. Ve su'vi us	3,700
Snow don' (Wales)	3,500
Ta'ble Mt. (S. Africa)	
Mont ser rat' (Spain)	3,300
As cut ney (Vermont)	

TENTH CLASS.

Cats'kill Mts. (N. Y.)	
——— *White Face*	2,600

ELEVENTH CLASS.

Mt. Tom (Mass.)	1,500
Rock of Gib ral'tar	

TWELFTH CLASS.

Mt. Holy'oke (Mass.)	1,250

ISLANDS.

271. ISLANDS are the tops of mountains or table-lands, whose base is in the bed of the ocean, and whose valleys and passes are filled with its waters.

272. They have all the varieties of *situation and appearance* which belong to mountains; some rising alone, like insulated mountains, as the celebrated rock of St. Helena; others arranged in groups; and others still in chains.

They present, in short, the same appearance as a hilly or mountainous country, covered with a flood, which leaves only the most elevated spots exposed.

273. *Small islands* are sometimes mere rocks, scantily covered with soil, without rivulets, and often without springs. *Large Islands* are only continents in miniature; and have their own system of mountains, valleys, and streams.

274. The same variety of *structure* is found in islands, as in hills and mountains. Some are composed of rocks, varying in form according to their class: others consist of mere banks of sand, or alluvial beds, thrown up by the sea, or by the current of a river

275. Some *islands have been produced* within the memory of man, and others enlarged or elevated by the eruptions of volcanoes in the sea. There are many others, like the Canaries, Azores, and Lipari Islands, whose appearance and rocks indicate that they were formed in this manner.

276. Some islands consist entirely of *coral* or madrepore, a rock which is formed by a small marine insect or polypus, of the torrid zone, for its habitation.

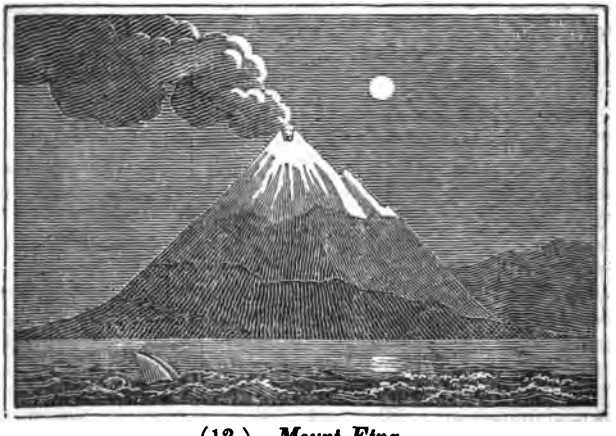
A portion of the rock seems to be first formed on the bed of the ocean by these insects, upon which they build until the mass rises to the surface in the form of *coral reefs*. Sand, shells, and other substances, are thrown upon them by the waves; and they become the resort of sea-birds. Small animals and the seeds of vegetables are then lodged upon them from floating wood or seaweed; and they are at length covered with soil, and prepared for the habitation of man.

277. *Reefs and islands of coral* are found in every stage of formation; and new ones frequently appear in places where the water is unfathomable, surpassing the proudest work of man.

A single reef of coral, on the eastern coast of New Holland, is 350 miles in length, without any considerable opening; and the island of Tongataboo, with many others in the Pacific, consists chiefly of coral, formed in the manner described.

278. Several *harbors* of the Red Sea have been blocked up by the labors of these animals; and the port of Bantum, in Java, was closed in the course of a century in the same manner.

VOLCANOES.



(13.) *Mount Etna.*

279. Volcanoes have not the same *permanency of character* as other features of the globe. They are in fact, only mountains

which are subject to the action of internal fire, and their number and character are liable to continual change from its effects.

230. The fires of volcanoes burst forth in *eruptions* of smoke and flame, and melted stones, or *lava*, from an opening called the *crater*.

231. A few, like that of Stromboli, near Sicily, *blaze continually*. But *in most volcanoes*, eruptions take place only at intervals; and for a great length of time, nothing but smoke issues from the top; accompanied in some cases, as in Vesuvius, by a small stream of lava from an opening in the side. Some *ancient volcanoes* have become extinct or dormant, and *new ones* have burst forth, within the memory of man.

232. More than 200 *volcanoes* are *known* to exist in the world, one half of which are in America; but many of them have never been described, and have scarcely received a name in works of geography.

The volcanoes of Europe and Asia are generally on islands; but those of America are chiefly on the main land; as will be seen in the following statement of their number by Jamieson.

Europe,	on the	continent,	1—	on	islands,	12.
Asia,	" "	"	8—	"	"	58.
America,	" "	"	97—	"	"	19.
Africa,	" "	"	unknown		"	many.

The *extent and connection* of these volcanoes is such, that we may trace them through the greater part of the grand mountain ranges of the earth which have been described.

233. Commencing at Terra del Fuego, or the land of fire, on the southern extremity of the *Western Continent*, we find a range of volcanoes, some active and others dormant, extending along the American chain, to the Arctic Circle.

Not less than 40 volcanoes are continually burning, between Cape Horn and Cotopaxi. The whole mountainous region of the province of *Quito*, may be considered, according to Humboldt, as one immense volcano, more than 2,000 square miles in extent; throwing out its fires through the craters of Cotopaxi, Tungurагua, Antisana, and Pichinca; and a large part of *Mexico* exhibits similar appearances. The Peaks of Orizaba and Popocatapetl, with those which have been mentioned, rise three or four miles above the level of the sea, and form the loftiest volcanoes upon the globe.

234. *At Beering's Straits*, we find the same range continuing in a winding course, through the chain of islands which connects the two continents, to Kamschatka, and the islands south of it; and thence, through Japan and Formosa to the Philippines, the Moluccas, the Sunda Isles, and the New Hebrides.

235. Marks of volcanic fire are also found in the *islands* of New Amsterdam, and St. Paul's and Bourbon in the Indian Ocean; and that of Gebel Tar, in the Red Sea; and *thence* we may find the *traces of these fires* in earthquakes, hot springs, volcanic rocks, or active volcanoes, through Syria, Greece, Italy,

298. *Volcanoes most frequently exist* in the vicinity of the sea, or of great lakes; and sometimes burst out from unfathomable depths in the ocean.

Submarine volcanoes are preceded by a violent boiling and agitation of the sea. Smoke, flames, and lava, are thrown up through its waters, with volumes of inflammable air, which roll in sheets of fire over the waves.

299. In some cases, the quantity of matter is so great, as to rise above the surface of the water, and form new reefs and islands. In 1811, a volcano burst out in the sea, near St. Michael's, one of the Azores, and formed an island of considerable height, about a mile in circumference, which was named Sabrina. It has since disappeared. Similar instances have occurred in the Archipelago. In 1814, a volcanic island arose near Oonalaska, on the western coast of North America.

(II.) EARTHQUAKES.

300. *Earthquakes* are sudden motions of the earth, which are intimately connected with volcanoes, and from which no portion of the earth is entirely exempt.

301. They are usually *preceded* by a general stillness in the air. The sea swells and roars, without wind. Sometimes it rises to a great height, and overflows the land: and then sinks back as suddenly to its level. The fountains are agitated, and send forth muddy or impure waters. A deep, rumbling noise, like that of carriages over a rough pavement; a rushing sound, like wind; or a tremendous explosion, like the discharge of cannon, immediately precedes the shock. The ground suddenly heaves upward, or is rocked from side to side, with successive vibrations, overthrowing the feeble structures erected by man, and scarcely permitting their inhabitants to totter into a place of safety.

302. *The first shock* seldom lasts longer than a minute, and frequently completes the most awful destruction in this short period. This is often followed by many others in succession, and sometimes for several weeks.

303. *Chasms are occasionally opened* in the earth, from which smoke and flame, or torrents of water burst forth. In some cases, they have been so extensive, that large cities have sunk down in a moment, as was the fact with the city of Euphemia, in southern Italy, and Port Royal, in Jamaica.

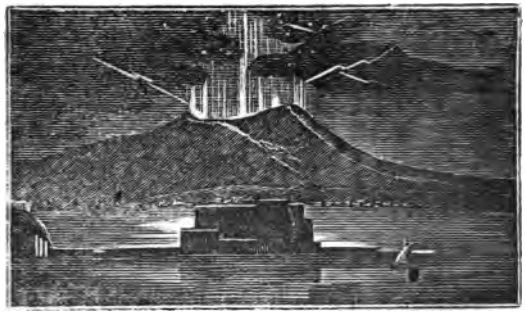
304. Earthquakes sometimes *change the aspect of a country*. Whole islands are sunk or raised; the course of rivers changed; and the sea breaks in upon the land, forming new bays and gulfs, or cutting off islands from the main. It was by such irruptions of the sea that Callao, in Peru, was overwhelmed in 1687, and St. Ubes, in Portugal, in 1755, with great numbers of their inhabitants.

305. The *most dreadful earthquakes* have taken place in the countries bordering on the Mediterranean Sea, and in those which surround the Caribbean Sea, and the Gulf of Mexico. In Peru they are frequent. They have been occasionally experienced in most other countries. A considerable number have been felt in the *United States*, most of which were slight.

306. In 1755, a very *remarkable* and destructive *earthquake* extended over a large part of Europe, Africa, and America. It was most terrible in Portugal and the neighboring countries. St. Ubes was swallowed up in the sea; Lisbon was almost destroyed; and several towns in Spain and Barbary were either destroyed or very much injured. It was felt in the north of Europe, and the northern United States; and even the waters of the great lakes of North America were agitated by it.

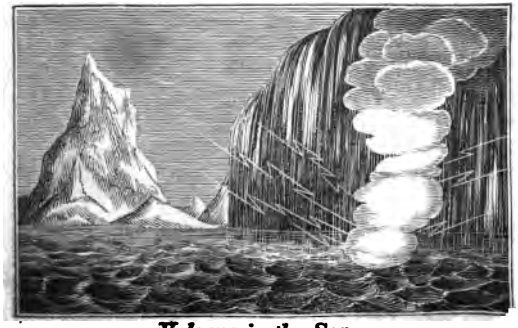
307. *One of the most recent earthquakes of importance* occurred in the northern part of Syria, in the autumn of 1822. By the first shock, Aleppo was destroyed to its foundations, and almost every village in the province. 20,000 persons are supposed to have perished in the ruins. The shocks continued to be felt for nearly two months, and kept the inhabitants in continual alarm.

308. From the beginning of the *year* 1811, *till* 1813, a great extent of the earth lying between 5° and 48° of north latitude, from the meridian of the Azores to the Chippewan Mountains of North America, and from the coasts of Venezuela and the Andes of New Grenada, to the Green Mountains of Vermont, was shaken by numerous earthquakes. More than 200 shocks were felt in the island of St.



Mount Vesuvius.

Crater of the Volcano Vesuvius.



Volcano in the Sea.

Mountains of New Grenada.

Mount Hecla.

Effects of an Earthquake.

Vincent; and during the same period, the volcanic island of Sabrina arose among the Azores.

309. *The Earthquake of Venezuela*, in 1812, was one of the most dreadful in modern times. In the city of Caraccas, the shock lasted less than one minute; yet nine tenths of the city was entirely destroyed.

310. The *most violent* ever known *in the United States*, were those which occurred in 1811 and 1812, in the middle, southern and western States, from New-York to Florida and Mississippi; and particularly on the Mississippi River. Eighty-seven shocks were counted in seven days.

The river was so violently agitated that the crews of boats could not stand on their feet. The banks, in many instances, fell in, and new islands arose from the bed of the river. The earth moved like the waves of the sea. Whole forests were overthrown, and others were swallowed up in chasms, so deep as to conceal their tops. The village of New Madrid was almost destroyed. Trifling shocks are still frequent in some parts of this region, especially at Cape Girardeau and New Madrid.

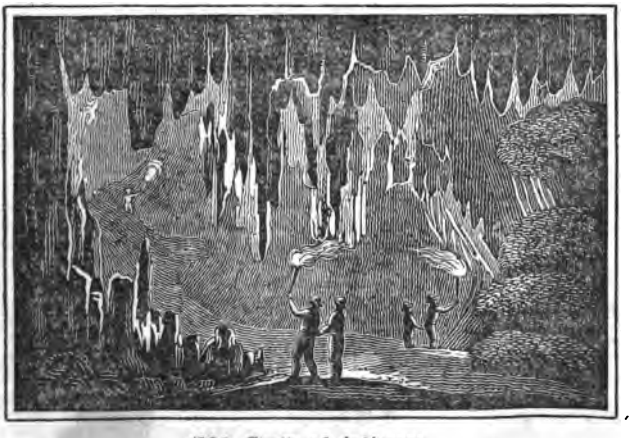
311. Earthquakes are *most frequent* in volcanic regions. The shocks are the most violent at the greatest distance from the volcano, or when it is not in a state of eruption.

312. These circumstances, and the similarity of the phenomena of volcanoes and earthquakes, indicate their *common origin* in the internal fires of the earth. Volcanoes have been styled *the chimneys* through which these fires have vent; and their eruptions are considered as a means of securing the surrounding country from the more dreadful and extensive destruction of an earthquake.

313. The *shocks* and *eruptions* are probably *produced* by the sudden formation of vapor and gases, (perhaps by the influx of water from the sea,) which burst forth like the smoke from a cannon, or the steam from an overcharged boiler.

But from the very nature of the subject, man can do little in investigating the causes of these awful phenomena, which exhibit in so striking a manner the power of the Creator—"HE looketh on the earth, and it trembleth; He toucheth the hills, and they smoke."

(II.) CAVES.



(16.) *Grotto of Antiparos.*

314. In various parts of the earth, *Caves* are found which are often objects of curiosity and wonder.

315. Many are mere *naked cavities*, wonderful only on account of their great size and extent; or sublime, from the awful gloom which pervades them, and the echoes which roll like thunder through their vaulted passages. Some are of *great depth;* as that of Frederickshall in Norway, which is calculated to be 11,000 feet in depth. Others *contain* rivers and cataracts, which add to their beauty or grandeur. Sometimes they receive into their bosoms considerable streams of water, for which there is no visible discharge.

316. One of the grandest natural caverns known is *Fingal's Cave*, in Staffa, one of the Western Islands of Scotland. Its sides are formed of ranges of basaltic columns, which have almost the regularity of hewn stone. The roof is composed of the tops of others, which appear to have been broken away. The length is 370 feet, the height at the entrance 117 feet. Its bottom is covered by the sea, and the light pervades every part of it. It is a striking example of the grand and beautiful architecture of nature.

317. In *Iceland*, there are many caves, formed by the lava from its volcanoes. One of these, called Sutzkeller, in the north-eastern part of the island, is 40 feet high, 50 feet broad, and 4,300 long. It contains large quantities of ice and snow.

318. *The caves found in the neighborhood of volcanoes*, often exhale hot and sulphureous vapors. The sulphur is condensed in some of them, and obtained as an article of commerce.

319. In *South America*, is the Cavern of Guacharo, which is said to extend for leagues. It has never been examined more than one fourth of a mile; but thus far, its form was found uncommonly regular.

320. In the volcanic country *near Rome*, there are many natural cavities of great extent and coolness, which are sometimes resorted to as a refuge from the heat. The grottos in the *Cevennes Mountains*, France, are both numerous and extensive, and abound with objects of curiosity.

321. Such *caverns* in France and Italy, not unfrequently, are so cool as to *preserve ice* through the year; and thus form natural ice-houses. The water trickling from the roof, continually renews the supply.

Natural ice-houses are also found in fissures or cavities at Williamstown, in Massachusetts; and in the Meriden Hills, a range near New-Haven in Connecticut. At Szeilitze, in Hungary, is a cave with numerous winding passages of great height, of the same kind.

322. Caverns are *most frequent* in limestone rocks. In these instances, the water trickling through the roof dissolves a portion of the lime, and again deposits it when dropping. It thus gradually forms a slender tube, like an icicle, called a *stalactite*, often of pure and brilliant whiteness. In the progress of time, these stalactites are lengthened into large pillars, hanging from the roof. This class may be termed *stalactic caves*.

323. The water which falls on the floor of these caverns makes a similar deposit, and forms a pedestal there, called a *stalagmite*, which often unites with a stalactite, and completes a column. These columns are frequently enlarged to a great size, varied in their shape, and sometimes beautifully fluted.

324. In some cases, the parts are imperfect. A stalagmite rising from the floor, seems like an altar on a statue; or a number of stalactites depending from the roof are united into a curtain. In this way the most interesting and fantastic forms are produced; and one of these cavities often resembles an immense cathedral, lined with columns, or a magnificent palace in ruins.

The deposit which forms the stalactites and stalagmites, is capable of being polished and wrought into the most beautiful ornaments, and is usually called *spar*.

325. The most celebrated cavern of this kind is the *Grotto of Antiparos*, on the island of the same name in the Archipelago. The passage at the entrance glitters with the torch light, as if studded with diamonds. From this, the traveller is let down several precipices, by ropes, to the depth of 1,500 feet, before he reaches the principal grotto, a magnificent vault, 360 feet long, 340 wide, and 180 in height.

The roof is adorned with stalactites, many of them 20 feet long, and hung with festoons of varied forms and brilliant appearance. In some parts, immense

columns descend to the floor. In others, is presented the appearance of trees and brooks turned to marble.

326. The *Peak Cavern* in Derbyshire, England, is also a celebrated curiosity of this kind. It is nearly half a mile in length, and at its lowest part, 600 feet below the surface.

The mine of Fluor Spar in *Castleton*, Derbyshire, passes through several stalactic caverns, which are said to rival that of Antiparos in beauty. Many other caverns are found in this neighborhood, and in other parts of England, with the same general features. Some of these contain subterraneous cascades, whose beauty and grandeur are increased by the circumstances in which they are seen.

327. In the *Rock of Gibraltar*, there are a number of stalactic caverns, of which the principal is St. Michael's Cave. The entrance is 1,000 feet above the sea, leading into a spacious hall, incrusted with spar, and terminated by immense columns of the same substance. Most *mountains of limestone* contain similar caves, varying chiefly in the circumstances of size and depth.

328. In the limestone regions of England, Germany, and Hungary, caverns are found *containing great quantities of the bones* of the elephant, rhinoceros, hyena, and other animals now extinct. Those of Kirkdale, in England, and Gailenreuth, in Germany, are among the most remarkable.

The bones are enclosed in a bed of clay, which bears evident marks of *diluvial origin*. The animals were doubtless natives of the country; and were probably all destroyed by the deluge. No species of the same animals are now found, except in hot countries.

329. There are many stalactic caves in the *United States*.

Madison's Cave, in Rockingham County, Virginia, is an interesting object of this kind, extending 300 feet into the earth, and adorned with beautiful incrustations of stalactites.

Wier's Cave, in the same county, is of the same kind, extending 800 yards, but extremely irregular in its course and size. It does not appear to fall short of any in the United States, in the beauties peculiar to such caverns. Near the *North Mountain*, in Frederick Co. Virginia, is a stalactic cave, 400 feet in extent.

330. On the banks of the *Swetara* River, a branch of the Susquehannah, in Pennsylvania, and in *Clarendon*, *Dorset*, and *Derby* in Vermont, *Watertown*, New York, and many other places in the United States, are similar caves. At *Rhinebeck*, Dutchess County, New York, is a cave of this kind, composed of two chambers, one above the other.

331. *Another class of caves* includes such as produce nitre, and salts of different kinds.

332. Near Corydon, Indiana, is a cave which has been explored to the distance of several miles; and is celebrated for producing *Epsom salt*, which is continually forming in the earth on the bottom.*

333. In *Kentucky and Tennessee*, caves are numerous, which appear to have been used as burial places. The earth found in them is often so impregnated with *nitre*, that great quantities of this article are manufactured from it. Some in Kentucky are said to be several miles in length, containing rooms of immense size, and frequently adorned with stalactites.

In the northwest part of Georgia is a cave of this kind, called *Nickojack Cave*, 50 feet high, and 100 wide; which has been explored to the distance of three miles. A stream of considerable size runs through it, which is broken by a water-fall, at this distance from the mouth.

334. In the Allegany Ridge, in Virginia, is a *blowing cave*, from which wind constantly issues. It is 100 feet in diameter, and the current of air is so strong as to keep the weeds prostrate, to the distance of 60 feet from its mouth. A similar one is found in the Cumberland Mountains.†

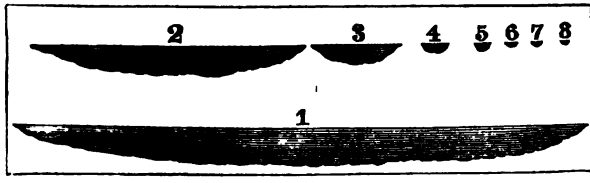
335. Caves are sometimes found which exhale *poisonous vapors*. The most remarkable known, is the Grotto Del Cane, a small cave near Naples, in Italy.

---

* Silliman's Journal. † Morse.

A continual stream of fixed air, or carbonic acid gas, issues from it, which will put out a torch or destroy the life of an animal held in it. This air is heavier than common air, and rises to a small height only from the ground. From this circumstance, a man may walk upright, without any injury; while a small animal falls down breathless, and dies unless it is taken out.

RIVERS.



(17.) *Sections of Rivers, across the channel.*

1. *Mouth of the La Plata.*—2. *Amazon.*—3. *Orinoco.*—4. *Ganges.*—*Hoang Ho.*—5. *St. Lawrence.*—6. *Danube.*—7. *Rhine.*—8. *Connecticut.*

336. Rivers *are chiefly supplied with water* by the springs and snows of the mountains. The *quantity* depends in part on the elevation of the mountains from which it flows, and the extent of their snows or glaciers: but the magnitude of the stream increases generally, in proportion to the extent of country which forms the declivities of its basin.

This may be seen by comparing the various rivers of the earth, as represented on the maps. The basin of the Amazon is 3 millions of square miles in extent; or equal to the whole of Europe. The basins of the Mississippi and La Plata are 1½ millions of square miles each; or nearly equal to Russia.

337. In many instances, *the same mountains, or highlands, send their waters into different* and *distant seas;* as is the fact with the Alps, in Europe. Hence the sources of streams which empty into different oceans, are often very near each other; as those of the Columbia and Missouri Rivers. In such instances they sometimes communicate with each other, like the Illinois, and the Chicago of Lake Michigan, in the United States.

338. The basins of rivers sometimes pass into each other, so that *the streams are connected.* Thus the Amazon and Orinoco are connected by means of the Cassiquiari.

339. There are some *streams which dry up* during the warm season, and are only filled during the months of winter, or of rain. Persia and East Persia, present many examples of this kind; and the same fact is seen in the Canadian River and other streams of the Great American Desert.

340. *The current of rivers is at first occasioned* by the descent of the ground; but this impulse sometimes drives them on, over ground which is almost level. Thus the Amazon descends only one tenth of an inch in a mile, for the last 400 miles of its course;

and the Paraguay, one thirty-third of an inch in the same distance.*

In one part of its course, the Seine descends only one foot in a mile; and the Ganges, only nine inches.

341. The *course of rivers* is generally winding. This increases the length and difficulty of navigation; but it checks the velocity, which would otherwise prevent navigation entirely. The earth also is more thoroughly watered; and the destructive effects of a violent current are prevented.

342. *Those rivers*, or portions of rivers, *which flow through primary or transition countries*, meet with sudden declivities, and frequently roll through rocky channels, with steep, rugged banks, which are not liable to change. They are often obstructed by bars, straits, falls, and rapids; and navigation is generally difficult, and often impracticable. The narrowness of the channels frequently renders *floods* very destructive.

343. These rivers generally empty by a *single mouth*, which is deep and unobstructed, so that the access from the ocean is easy. The *water* is usually pure; and the rapid descent of the streams produces *mill seats* in great abundance. The rivers of New England furnish many examples to illustrate these remarks.

344. *The rivers of secondary and alluvial districts* flow with a slow, but powerful current. The channel is deep and unob structed; and the streams are navigable, often to their sources Even the rapid rivers of primary regions, when they reach these level vales, often expand into broad and tranquil streams, resembling lakes.

Examples of these facts occur in the lower portions of the Mississippi, the Amazon, the Orinoco, the Nile, the Ganges, and the Rhine; and in the rivers of the secondary and alluvial regions of the United States, particularly in the Atlantic States, south of New Jersey

345. The *banks* of these streams are usually low, and gradual in their descent; and are composed of soft rocks, or alluvial grounds, which are easily worn away by the waters. Hence the channel is very liable to change, especially in those rivers which are liable to floods. The waters of the Po, flow several miles from their former channel.

346. *The streams of alluvions form* marshes, savannahs, and rich meadows on their banks, which are very fertile, but often extremely unhealthy; as in the Southern United States. The water is muddy and impure; and sometimes partially corrupted, from the sluggishness of the current.

* Edinburgh Gazetteer.

347. *The country at the mouths of these rivers* is usually level, and the stream is divided into a number of channels, often obstructed with bars and shoals, by which the communication with the ocean is rendered difficult or dangerous.

348. The tract enclosed by these channels, is called a *delta*, from the resemblance of its form to that of the Greek letter Δ (delta.) It is usually divided into a number of small islands as in the Mississippi, the Nile, the Danube, and the Ganges.

349. *The course of rivers is not always along the regular line of descent.* They frequently pass through considerable chains of mountains; as is the fact with the Amazon, the Missouri, the Rhine, the Rhone, and many others.

The *Elbe*, after traversing the basin of Bohemia, issues from it by breaking through the Erz Mountains on the north; although the range on the south is less elevated. The Danube, after flowing for some distance along the foot of the Carpathian chain, passes through it. In Asia, the *Yenesei*, the *Oby*, and the *Irtish*, pass through mountain chains. The *Indus* and the *Ganges*, break their course through the lofty ranges of the Himmaleh; and the *Orinoco* and *Amazon* of South America, through the inferior ranges of the Andes. In the United States, almost all the great rivers pass through chains of mountains. The *Missouri* and the *Potomac* have been mentioned. The *Hudson*, the *Delaware*, and the *James*, pass through the Blue Ridge; and some rivers cross several chains of this range.

350. *The floods of rivers deposit* the coarser gravel, and earth which are brought down, in the bed, and on the banks of the stream, and thus raise them. As they spread farther over the country, the water becomes clear, and deposits less. In this manner, the level of a stream is often permanently elevated above the surrounding country.

Thus the waters of the Rhine, in Holland, and of the Adige and the Po, in Italy, are elevated above the level of the country; and are only prevented from overflowing it, by dykes. The Po flows above the level of the roofs in the neighboring city of Ferrara.*

351. Many *rivers are lost*, or disappear in the earth, before they reach any extensive reservoir of water. In some instances, they appear to descend into caverns, and rise again at some distance. The Rhone is lost in this manner, on the borders of Switzerland, and rises again at the distance of 300 feet. The Gaudiana of Spain is lost for several miles; and a number of the same kind occur in France and England.

352. Sometimes *rivers* disappear, in consequence of being *absorbed* by the earth, or evaporated by the heat. In some instances they form small lakes which have no outlet, and are evaporated in this way. The Rio Dolce, and other rivers in the Pampas of Buenos Ayres, disappear in this manner; and many similar examples occur in the deserts of Asia and Africa.

353. The waters of a stream are sometimes reduced by

* Cuvier's Geology.

drought, when it is termed *low water*. At other times, the melting of the snows, or heavy rains, fill their channels, and form *high water;* or raise them above the banks and cover the surrounding country with a *flood*. The rise of a large stream frequently checks the current, and drives back the water of its branches; and thus extends the flood to a great distance.

354. *In the streams which descend immediately from mountains covered with snow*, as in the Alps, the heat of the sun melts the snow, and produces high water every day; the increase is greatest in the hottest days.

355. Most of the large rivers on the earth are subject to *annual* or semi-annual *floods*, of greater or less extent. The St. Lawrence, of North America, is probably the only one which is not affected by rains or drought.

The level of its waters is changed only by winds. A west wind sometimes raises the eastern extremity of Lake Erie six feet.

356. Floods are *most remarkable* and extensive in the Torrid Zone; and occur during the rainy season, or soon after. Those rivers which *flow from east to west*, as the Niger and Orinoco, receive the rains in every part at about the same time, and increase equally in all portions of their course. But in those which *flow north or south*, like the Nile and the Indus, the flood does not take place in the lowest parts of the stream, until some time after the rains have fallen at the source. Rivers which receive numerous branches from an extensive basin, like the Mississippi, are usually irregular in their floods, from the variety of seasons in different portions of the basin.

357. The *floods* of the Nile, the Ganges, and the Mississippi, *rise* about thirty feet above the common level. The Ohio, and other branches of the Mississippi, often rise forty or fifty feet; and the Orinoco, from seventy to one hundred and twenty feet. The floods of the Orinoco, the Amazon, and the Ganges, cover the country for 100 miles in breadth.

In the floods of the Mississippi, its waters flow down on the adjacent country, producing an extensive range of swamps. It has been necessary on this account, to protect the cultivated lands by an embankment called the *Levee;* which extends for the distance of 200 miles on *the eastern shore* of the river, and 300 *on the western.*

358. *The floods of rivers*, especially in the Torrid Zone, are often very *destructive*, sweeping away houses and villages. It was estimated that the flood of the Ganges in 1822, destroyed from 50,000 to 100,000 persons. At the same time they are *highly useful*, by leaving behind them a deposit of vegetable mud or slime, which renders the vales of rivers the most fertile spots on the earth. Egypt is entirely dependent on the floods of the Nile, for watering, as well as fertilizing its lands.

359. The *current* of a river is often *so powerful*, that the waters may be distinguished from those of the ocean, at some distance from the shore, especially during a flood; as in the Amazon and Orinoco.

A British fleet lying opposite the mouth of the Rhone, occasionally took up fresh water at some distance from the shore. The waters of the Amazon are said to remain fresh, for 240 miles from the coast; and Columbus found his vessel in the fresh water of the Orinoco, before he discovered the continent of South America.

360. The level of rivers falling into the sea, usually varies with the tides, for some distance from their mouths, which depends on the obstructions of the current and channel.

In the Amazon, the tide is perceived 400 miles from its mouth; in the Thames of England, 70 miles. In the Connecticut it ascends 50 miles; in the Hudson, 160; in the Potomac, 200; and in other rivers of the United States, it does not generally pass the limits of the alluvion.

361. The *current of a river in meeting with the tides* or waves of the sea, sometimes produces an elevated ridge of waters which obstructs the passage of ships; as in the Garonne of France. The force of the sea often prevails against the current, and a mountain wave rolls swiftly up the stream, overturning boats, inundating the banks, and often producing extensive destruction.

This phenomenon is called the *bore*, in India; and in South America the *pororoca*. In the Garonne and Amazon it occurs twice a day at the time of high tide. At the mouth of the Ganges, it occurs three times during every rise of tide; and the water often rises five feet instantaneously at Calcutta.

362. *The rivers of the earth may be arranged* according to their length, in twelve classes; as exhibited in the Comparative View of Rivers, and in the following table.

Class.	*Length.*				*Examples.*
I.	3,000	*to*	4,000	*miles.*	Amazon, (S. A.)
II.	2,000	*to*	3,000	"	Nile, (Afr.)
III.	1,500	*to*	2,000	"	Orinoco, (S. A.)
IV.	1,000	*to*	1,500	"	Ohio, (U. S.)
V.	800	*to*	1,000	"	Tigris, (Asia.)
VI.	600	*to*	800	"	Potomac, (U. S.)
VII.	500	*to*	600	"	James, (U. S.)
VIII.	400	*to*	500	"	Connecticut, (U. S.)
IX.	300	*to*	400	"	Hudson, (U. S.)
X.	200	*to*	300	"	Shenandoah, (U. S.)
XI.	100	*to*	200	"	Schuylkill, (U. S.)
XII.	*below*		100	"	Lehigh, (U. S.)

363. America contains the largest rivers of the globe. The *Mississippi*, if we follow the Missouri (which supplies the greater part of its waters,) is the longest river in the world. The *Amazon* is not so long as the Mississippi; but in the magnitude of its basin, and the volume of its waters, it far surpasses this, and all other rivers. Its mouth is 50 miles wide. The *branches* of the Amazon and Mississippi, hold the second rank among the

rivers of the world; and compare with the largest on the Eastern continent.

364. The waters of the *St. Lawrence* expand into a chain of lakes, which cover a surface of 90,000 square miles. It thus ranks among the first rivers in point of grandeur. The *Paraguay* is unrivalled in the size of its estuary of fresh water, 150 miles wide, on which ships may sail without seeing the land. The *Orinoco*, although inferior in length, surpasses most rivers of the eastern continent in the volume of its waters. Its principal mouth is 25 miles in width.

365. The *Kiang* of China, is probably the first river on the eastern continent *in length*. Its course is about 2,200 miles; and its channel, for some distance, is 2 or 3 miles in width.

366. The *Ganges* is equally wide in the lower part of its course; and near its mouth it is probably *the largest stream* in Asia.

367. The *Nile* holds the first rank among the rivers of Africa It is remarkable that it does not receive a single branch, for the last 1,000 miles of its course.

This has led many to believe that it was a continuation of the *Niger*, according to the uniform account of the Moors; which is now found to empty itself into the Gulf of Guinea.

368. The *rivers of Europe*, although more celebrated in history, are much inferior in length and size to those of Asia and America.

369. In the following table, the principal rivers of the world are arranged in classes, with their estimated length annexed.

LENGTH OF RIVERS.

FIRST CLASS.	Miles.
Am'a zon	4,000
Mis sis sip'pi	3,000 to 4,000
Mis sou'ri	
SECOND CLASS.	
Vol'ga	*above* 2,000
Nile	
Ki'ang	
N'iger (prob.)	
Ar kan saw	
Mac ken'zie's River	
Rio-del-nor'te	
St. Law'rence	
Rio-de-la-Plata	
(with the Paraguay)	
Ho ang-ho	*about* 2,000
A'mour	
Yen i se'i	
Me'con or Cam bo di a	
O'by	
La'na	

THIRD CLASS.	Miles.
Dan'ube	1,600
Gan'ges	
O ri no'co	1,500
Ma dei'ra	
To can'tins	
La Platté	
Red River	
Co lum'bia	
Nel son's River	
Eu phra'tes	
Bur'rampoo'ter*	
FOURTH CLASS.	
In'dus	1,300
Ir'a wad y*	1,200
Ten nes see'	1,100
Yel'low Stone	

* It is believed by some, that the Burrampooter is distinct from the Sampoo, and that the Sampoo is a branch of the Irawady. This would elevate the Irawady to a higher class.

Fourth Class continued.	Miles.
St. Fran cis'co	
Xin'gu	
Co lo ra'do, N. A.	
O hi'o	
Dnie'per	1,000
U ra guay	
Pilco may'o	
Ver mey'o	
Kan'sas	
Pa ra'na	
FIFTH CLASS.	
Sen e gal'	
Sut'ledge	
Ji'hon	
Clark's River	900
Lew'is' River	
Mult no'mah	
Sa la'do	
Ne'gro	
To pay'os	890
Don Ti'gris	
Go da ver y	
SIXTH CLASS.	
Jum'na	780
Rhine	700
Church'ill	
Krist'na	650
Poto'mac	
Cum ber'land	
O sage'	
Dnies'ter	600
Or'ange	
Gam'bia	
Ural	
SEVENTH CLASS.	
James	550
Ot ta wa'	
Al ta ma ha'	
Ap a la chic'ola	
Wa'bash	
Yu pu'ra	
Dwi'na	500
Dwi'na or Ivu'na	
Elbe	
Rhone	
Loire	
EIGHTH CLASS.	
Ne'va and Volkof	
Nie'men	
Pet cho'ra	
Ta'gus	
Vis'tula	
Al a bam'a	450
Pe dee' *San tee'*	
Tom big'bee	
Sa van'nah	
Sus que han'nah	
A pure'	

Eighth Class continued.	Miles
Con nect'i cut	
Al'le ga ny	
Great Ken ha'way	
Il li nois'	400
Bog	
Save	
Ol'i phant's	
O'der	
NINTH CLASS.	
Drave	
Dou'ro	
E'bro	
Gua di a'na	350
Po	
Cape Fear	
Ro an oke'	
Hud'son	320
We'ser	
Ga ronne'	
Glom'men	
Gua'dal quiv ir	
Mayne	300
Tor'ne a	
Del'a ware	
TENTH CLASS.	
Seine	280
Mo non ga he'la	
Pe nob'scot	
Dahl	
She nan do'ah	250
Inn, Ger.	
Ya zoo'	
Ad'ige, Italy	
Mer'ri mack,	200
Mi a'mi	
Lick'ing	
ELEVENTH CLASS.	
Thames, Eng.	180
Ti'ber	
Shan'non	170
Ken ne bec'	
Sev'ern	
Hou sa ton ic, Conn.	150
A ar, Switz.	
An dro scog'gin	
Schuyl'kill	140
Sci o'to	
Mo'hawk	
Gen es see'	130
Rap pa han'nock	
Ar'no, It.	100
TWELFTH CLASS.	
Reuss, Switzerland	80
Le'high	75
On'ion, R. Vt.	70
Pas sa'ic, N. J.	65
Mer'sey, Eng.	60

Questions.—Mention the rivers of the first class in order. Where is the source of the Amazon, through what countries does it pass, and where does it empty? Give the same account of the Mississippi and Missouri. Which division of the earth contains them? Give the same account of other classes of rivers. Which is the largest river of Europe? Of Africa? Of America?

LAKES.

(18.) *Lake of Derwentwater.*

370. Lakes are valleys filled with water, which have no direct communication with the ocean.

371. *Most lakes discharge their waters* through a river into the ocean; and such are usually fresh. Some of them form the sources of rivers, and are supplied only by springs. A few lakes are found like that of Albano, near Rome, which neither receive nor discharge streams in their natural state. Others receive and discharge rivers; and are, in fact, mere expansions of the stream, produced by some obstacle which raises the waters, like an artificial dam.

Thus the Lake of Geneva is only an expansion of the Rhine; and Lake Constance of the Rhone. The River Irtish passes through Lake Nor. Lake Baikal is traversed by the Angara; and the Abyssinian Nile expands into the Lake of Dembeah. The great lakes of North America are only expansions of the waters of the St. Lawrence.

372. *Some lakes are formed periodically* in this manner, during floods; and disappear when they subside. The Lake Xarayes, on the Paraguay River, is an example of this kind, which has been alternately drawn and effaced on the maps of South America.

373. Another class of *lakes* consists of those *which receive rivers, but have no visible outlet.* The waters are probably car

ried off by evaporation. As there is no current to convey away the salts continually washed in from the surface of the land, such lakes are always salt, except in a few instances, in mountainous regions. The Caspian Sea, the Sea of Aral, and most of the lakes of Asia, Africa, and South America, are of this kind; but they are rare in Europe and North America.

Lake Urumea, one of the largest in Persia, is entirely salt. The Sea of Durrah, which receives the rivers Helmund and Ferrat, is fresh in the centre, but brackish near the shores. The celebrated Lake Asphaltites, or Dead Sea of Syria, is remarkable for the excessive saltness and bitterness of its waters. They are said to destroy the fish brought into it by the River Jordan and other small streams.

374. *Salt lakes are particularly abundant* in the hot countries, and the dry and desert regions of Asia, Africa, and South America. These often *evaporate* in the hot season, and leave a crust of salt on their beds; which thus become valuable as mines.

375. Some *lakes contain soda*, or natron, which collects on the bottom in a similar manner. The most celebrated are the six Natron Lakes of Egypt, lying west of the Nile; which furnish large quantities for commerce.

Such lakes are numerous in Hungary, and are found in Mexico and New Grenada. A lake in Maracaybo, (N. G.) deposits more than 1,000 pounds in two years; which is taken from the bottom by Indian divers.

376. In Thibet, there is an insulated lake which deposits a peculiar salt, the *borax* or *tincal* of commerce, which is much used in soldering metals.

377. In the largest lakes, like those of North America, already mentioned, the *level of the waters* is rarely affected by rains or drought. Smaller lakes are often materially changed; and some, as has been already stated, become entirely dry in the hot season.

The Lake of *Cirknitz*, in Illyria, (Austria), is remarkable for losing its water through a number of apertures on the bottom, during the summer. It ascends with considerable force in September; and this lake abounds with fish during the winter. It passes off entirely in June, and the lake becomes a fine pasture during the summer.

378. Large inland waters, like the Caspian Sea, and the lakes of North America, are subject to storms as violent and dangerous as those of the ocean. They are more sudden and more unsteady, on account of the mountains, which interrupt and vary the winds.

379. Some lakes are liable to sudden and *violent agitation*, without any visible cause. This is the fact with Lake Baikal, in Siberia; Loch Lomond, in Scotland; and Lake Wetter, in Sweden.

380. *Floating islands* composed of twigs and brush, mingled with turf, are found in some of the lakes of Scotland, Ireland,

Sweden, France, Germany, and Italy. In one or two instances, they are of considerable size.

381. Lakes are often celebrated on account of the *scenery* around them; which of course varies with the geological character of the country.

382. *The lakes of primary regions*, like those of the Alps, of Norway, Sweden, Scotland, and Finland, are distinguished for the wild and romantic character of their scenery. Their shores are usually lined with rugged precipices and dark forests; and they are often studded with rocky islands, which add to their beauty.

Lake Maler, in Sweden, is said to have 1,200 islands; several of which are covered by the city of Stockholm. The lakes of Geneva, Neufchatel, and Luzerne, which are celebrated for their beauty, are situated among the Alps, more than 1,200 feet above the level of the sea.

Lake Baikal, in Siberia, is distinguished for the sublimity of its scenery.

383. *The lakes of secondary regions*, like those of Derwentwater and Windermere, in England, are characterized by the softer beauties of the landscape. The banks are gently undulating, and usually adorned by cultivation. (*See Engraving, No.* 18.)

Such is the aspect of the Lakes Lucarno, Maggiore, Como, and others in Italy below the Alps. This is also the character of the lakes of Ireland. Those of Killarney are said to be among the most beautiful in the world.

384. *The lakes of alluvial districts* have low and level banks. They are often mere stagnant waters, with no beauty of scenery; and in some cases they produce unhealthy exhalations, from the marshes which border on them.

385. Lakes of this kind are *frequent* on alluvial coasts, and especially at the mouths of large rivers, like the Mississippi, and the Nile. They are formed by the bars and shoals common to such regions; and are usually connected with the sea, so as to partake of its saltness.

The shores of the Gulf of Mexico are lined with these lakes. Lakes Borgne and Ponchartrain, at the mouth of the Mississippi, are the largest. The sounds of North Carolina have something of the same character. The Lakes Patos and Merim, on the coast of Brazil, are of this kind. They are large and navigable bodies of water.

At the mouths of the Nile are the celebrated Lakes Mareotis, Aboukir, and Borlos, on the west; and Lake Menzaleh, on the east of Damietta.

386. *North America* is distinguished for the size of its lakes; which have even been the scenes of naval engagements. Lake Superior is the largest body of fresh water on the globe. The lakes of Nicaragua, in Guatemala, and of Maracaybo, and Titicaca, in South America, are also very large bodies of fresh water. These, as well as the great lakes of North America, are navigable for ships of any burden.

387. The *Caspian Sea* of Asia, is the largest inland body of water on the globe; but its waters are salt, and it is supposed by some to have been formerly connected with the Black Sea, and the Sea of Aral.

388. *Lake Baikal* is the largest body of fresh water on the eastern continent; but is less than Lake Superior.

389. Lakes Ladoga and Onega are *the largest in Europe* Both are less than lake Ontario.

390. *Africa* has few lakes. Lake Dembeah compares with the Lake of the Woods in size. The Lake of Tchad, recently discovered in Central Africa, is supposed to be as large as Lake Huron.

391. The following table shows the size of some of the principal lakes,—

SIZE OF LAKES.

	Length.	*Breadth.*	*Sqr. Miles.*
Caspian Sea - - - - -	640	260	120,000
Sea of Aral - - - - -	250	120	24,000
Lake *Superior* - - - - -	360	100	24,000
Baikal - - - - -	360	20—50	20,000
Huron - - - - -	220	90	20,000
Michigan - - - - -	300	50	15,000
Winnipeg - - - -	250	50	
Erie - - - - -	230	45	8,000
Ladoga - - - - -	140	75	6,200
Slave Lake - - - - -	270	50	
Lake *Maracaybo* - - - -	200	70	
Ontario - - - - -	180	40	5,400
Balkash (Chin. Tar.) - - -	180	80	
Onega - - - - -	130	70	3,300
Nicaragua - - - -	120	41	
Champlain - - - -	128	15	
Wenner - - - - -	80	30	1,500
Maler - - - - -	80	20	794
Lake of the Woods - - - -	70	40	
Wetter - - - - -	65	16	729
Lake of Geneva - - - - -	50	10	246
Cayuga Lake - - - - -	40	12	
Lake Constance - - - - -	40	10	203
St. Clair - - - - -			

Lake George.

Bellows Falls Between Vermont and New-Hampshire.

Falls of Niagara.

Passaic Falls, Patterson, New-Jersey.

The Falls of the Passaic are among the most beautiful in the United States. The river is 120 feet wide, and falls in one sheet, over a precipice 70 feet high.

P. 61.

II. FALLS AND CATARACTS.

(19.) *Horse-shoe Fall at Niagara.*

392. When a river passes down a sudden declivity, it produces *rapids;* when it flows over a precipice, it forms a *cataract;* when it falls from step to step in successive cataracts, it is often called a *cascade.* All these descents of water are termed *falls.*

393. *The rivers of primary* and *transition* countries abound in rapids, often of considerable height. Sometimes they occur in *secondary* regions, but the descent is always more gentle. Falls are *almost always found* in the passage of streams from the primitive to the other formations; but rarely occur in *alluvial districts.*

Thus the line which divides the primitive and alluvial formations on the coast of the United States is marked by the falls or rapids of its rivers; but none are found in the alluvion below.

394. *Rapids and falls* interrupt the navigation of rivers; but they are very useful in furnishing a cheap and convenient moving power for mills and other machinery, important to our comfort; and open sources of wealth in the most rugged countries.

In Holland, the West Indies, and other flat countries, the inhabitants are obliged to depend on mills turned by the wind, or the labor of animals; and some portions of the western United States also suffer much inconvenience for the want of mill seats.

395. *Cataracts* are often remarkable for their sublimity and beauty. They are so numerous in all mountainous countries, that only a few can be described, as specimens of the whole.

396. The *Falls of Niagara,* in the river of the same name, surpass all others of the known world in grandeur. The whole mass of water which forms the great inland seas of America, is here compressed into a channel of three quarters of a mile in width, and plunges over a precipice of 150 to 160 feet in height, into an abyss whose depth has never been fathomed.

The river is divided by Grand and Navy Islands, more than a mile above the falls, and from this place has a gradual descent of 57 feet. The banks preserve the level of the country, and rise in some places, 100 feet from the water. The rapidity of the current is such that the whole stream is covered with waves, and foams like the sea in a storm. At the grand falls, the river is three-fourths of a

mile broad, and the precipice winds nearly in a semicircle, extending in the longest line on the American or eastern side.

397. The falls are divided by Goat Island into two principal portions; the *American Fall* on the east, and the *Horse-shoe Fall* on the west or Canada side. A portion of the fall on the American side is cut off by a small island on the precipice, and forms a narrow sheet between this and Goat Island. The rest descends in one body, from a precipice 164 feet in height, and 1000 feet in length. The water is more shallow than in the other fall, and descends almost perpendicularly. Both the falls on the American side are crossed by bridges.

The Horse-shoe fall is 14 feet less in height, but far superior in grandeur. The great body of the water passes over this fall, and with such force that it forms a curved sheet, and strikes the stream below at the distance of 50 feet from the base of the precipice.

The wind and stream are frequently in a state which permits visitors to pass behind the sheet of water; but there is some danger of injury, from the fall of rocks which occasionally break off from the precipice.

The best view of the falls is from Table Rock, a projecting mass of rock on the Canada bank, in front of the Horse-shoe Fall.

398. The concussion of the waters produces a shock and roar which has been described as "a thunder which fills the heaven and shakes the earth." The clouds of spray which rise from the bottom and conceal the source of this tumultuous roar from the spectator, ascend to the height of 100 feet above the precipice, and float away in varied shapes to a considerable distance. They are frequently illuminated with a rainbow. Sometimes three are visible in different parts of the cloud, and crown the sublimity of the scene with their dazzling splendor.

The whole river seems to be in a foam, and for some distance is agitated with a deep tremor or vibration, like the heaving produced by the shocks of an earthquake.* The emotions inspired by such a scene are beyond description. The mind is overwhelmed with a sense of the weakness and littleness of man, and the awful power of the Creator.

399. *In describing this* wonderful cataract, the most sublime features of all others are described. The foam, the roar, the clouds of vapor, and usually the rainbow, attend most cataracts in a greater or less degree. A minute account of others would involve the repetition of similar circumstances, less grand and interesting in their character.

400. The *River Montmorenci* forms a cataract 220 feet in height, 9 miles below Quebec, which is in full view from the St. Lawrence. The body of water is small, and the breadth only 50 feet. The waters appear like snow-white foam, enveloped in a cloud of vapor, and the whole effect is grand. The falls of the *River Chaudiere*, which are not far distant, are about 100 feet in height, and are surrounded with interesting scenery.

401. The *Mississippi* forms a cataract, 40 feet in height, above its junction with the Ohio, which is more conspicuous for beauty than grandeur. The stream is 700 feet in width; the country around is level and fertile, and there are no precipices to interrupt the view.

402. The *Missouri*, at the distance of 500 miles from its sources, descends 360 feet in 18 miles, generally in a series of rapids. There are three principal cataracts. The highest is 87, the second 47, and the third 26 feet in height. The river is 1,000 feet broad, and the whole scene is said to be surpassed by no other of the kind except Niagara.

403. The falls of the *Passaic*, a small river in New Jersey, are among the most celebrated in the United States. They are situated at Paterson, about fifteen miles from Newark. The river is 120 feet broad, and falls in one entire sheet, into a chasm 70 feet in depth and 120 wide. Its waters form the moving power for one of the most considerable groups of manufactories in the United States.

---

* Pres. Dwight's travels—the principal source of this description

404. The *Mohawk* River, near its junction with the Hudson, forms the falls termed the Cohoes, about 60 feet in height. In the *Housatonic* River, in the northwestern corner of Connecticut, is a cataract of the same height, which is the finest in New England. When the river is high, it is said to surpass the Cohoes in grandeur.

405. The *small streams* of the United States abound in cataracts and cascades too numerous to mention. In the mountainous districts of *South Carolina*, there are several of considerable height and beauty. The *Catawba* River, in one part of its course, is precipitated in several falls, over a rocky channel, to the depth of 100 feet.

406. In *Georgia*, there is an interesting cataract in the Tockoa Creek, which flows from the Cunawhee Mountain, the southern termination of the Allegany ridge. It passes through a channel 20 feet wide, over a precipice 187 feet high. In a wet season, it descends in one sheet; but in ordinary periods, the waters are separated into a fine rain, or spray, before they reach the bottom.

A similar cataract occurs in the small river Ache, in Bavaria. It falls over an elevation of 200 feet by five steps; and is entirely scattered in spray. Its noise is heard several miles; and the current of air is so strong as to drive back the visitor from the gulf.

407. The *Connecticut* River has several falls or rapids, of which the most remarkable is Bellows Falls, near Walpole. The river, when low, is compressed into a rocky passage, 16 feet in width, and rushes down with immense force, and a tumultuous roar. The whole scene is grand and striking. There is a similar rapid in the *Hudson* River, at Glen's Falls.

408. The *highest cataract in America*, is that of Tequendama, in the River Bogota, or Funza, a branch of the Magdalena. This river rises in the lofty plain on which Bogota is situated, 9,000 feet above the sea, and is precipitated into the lower country through deep ravines, and over steep precipices; and finally plunges 600 feet into a deep chasm.

409. The *Cataracts of the Nile* have been very celebrated. They are described by Bruce as overwhelming the mind by their grandeur; principally as it would appear from the wildness and desolation of the scene. The first cataract is at Syene, and the other at some distance above. The stream is narrow in both places; and the highest fall does not exceed 40 feet.

410. The *primary regions of Europe* abound in cataracts. They are numerous among the mountains of Scotland, Norway, and Sweden. The torrents are seldom of great size; but the rocky beds over which they roar and dash in foam and spray—the dark, precipitous glens into which they rush—and the wildness of the whole scenery, often produce the most elevated emotions.

The most remarkable in Scotland is the Fall of Fyers. The River Gotha, which empties at Gottenburgh, has a fall of some celebrity, at Trolhetta. It descends 100 feet, in four distinct portions of 25 feet each.

411. *One of the most considerable water falls in Europe* has lately been discovered in the Rivet Lattin, in Swedish Lapland; which is said to be half a mile in width, and 400 feet in height. Another of immense size, has been discovered by Professor Esmark, in the River Maamelven, in Norway. It consists of three separate falls; two of them upon inclined planes, and the last over a perpendicular descent. The whole height is 800 feet.

412. The *Alpine highlands* of Europe abound in cataracts, some of which are of immense height.

The cataract of the Rhine, near *Schaffhausen*, which is 450 feet broad, and 70 in height, is much celebrated for its grandeur. The River *Orco*, which descends from Mount Rosa into Italy, forms a cascade whose height is estimated at 2,400 feet.* The fall of the *Evanson*, flowing from the same mountain, is stated to be 1,200 feet in height. At *Staubbach*, in the canton of Berne, in Switzerland, a small stream descends in a cataract 1,400 feet in height,† which is scattered almost entirely in spray. In these instances the quantity of water is small, and the chief interest is produced by the height from which it descends

* Pinkerton. † Edinburgh Gazetteer.

413. In *Italy* are the falls of Terni and Tivoli; which are celebrated for beauty rather than grandeur.

At *Terni*, about 45 miles north of Rome, the Evelino plunges over a precipice of marble rocks, 300 feet high; which has given it the name of the Marble Cascade. The water descends by three steps, and falls into the Nera, a branch of the Tiber, with a noise like thunder. The waters are very clear, but they contain lime, which is deposited on the rocks, and produces numerous petrifactions.

414. At *Tivoli*, 18 miles north-east of Rome, are the falls of the Anio, or Teverino, another branch of the Tiber. It glides with a gentle current, till it reaches the brink of the rock; and then precipitates itself to the depth of nearly 100 feet.

(II.) CANALS.

(20.) *Locks on the Grand Junction Canal*, (*Eng.*)

415. *Canals* are artificial passages for water; constructed sometimes for the sake of irrigation, but generally for inland navigation.

They are supplied from natural streams which are more elevated. As works of man, they do not properly belong to Physical Geography; but as channels of navigation, it is important to consider them in connection with the natural waters which they are designed to unite.

416. When canals pass *over level ground*, as in Holland, Egypt, and other low countries, it is necessary only to dig a channel, and fortify it with banks. The expense is here comparatively small, and the navigation is carried on without interruption, by means of boats drawn by horses. They serve in fact as a most perfect kind of road, on which a horse will draw thirty times as much as on land.

417. It is, of course, *very important* to preserve the level of a canal, even where the ground is irregular. *Valleys* which are not very extensive, are sometimes crossed by canals built on arches, to a great height. Numerous structures of this kind, which are termed *aqueducts*, were built by the ancients, to supply cities with water; and many still exist in Italy, Spain, and France. Artificial *embankments* often serve in place of aqueducts.

Modern canals are frequently carried across valleys and rivers in this manner. The passenger in England will frequently see a boat sailing over his head, across the road he is travelling; and those who navigate the rivers often see other boats moving, as if by magic, in a stream which flows over them at a

great height. The Grand Canal of New York, presents several examples of this kind, which exhibit, in a striking manner, the powers of modern art.

418. In passing *mountains and hills*, which cannot be avoided or cut down, subterranean passages are sometimes dug through them, which are called *tunnels*. The water is conducted through them, so that boats can pass on without interruption; and the traveller seems to enter the bowels of the earth.

An excavation of this kind in a branch of the Duke of Bridgewater's Canal, is nearly a mile in length, through a solid rock, in some places, 120 feet below the surface. Those of the canal of Languedoc, are only 375 and 543 feet in length, and 9 feet in diameter.

419. *Canals are usually carried over heights of land* by less expensive means.

The *Canals of China* are rendered navigable on declivities, by means of flood gates, which form a temporary dam. These raise the water to a considerable height on the top of the declivity, and are opened at stated hours in the day, when the boats collect, and are allowed to pass down the torrent formed by the accumulated waters. Where the declivity is too great to admit of this, they are obliged to resort to powerful engines, by which the boats are drawn up along an inclined plane, and let down in the same manner.

420. In European canals, great improvements have been made by the use of *locks*. These are no more than a succession of tight reservoirs, or basins of water, built on the declivity, one a little below the other, which are closed by flood gates at both ends, and are alternately filled and emptied to enable the boats to descend gently.

421. In descending, the water of the first lock is gradually let off into the second, until the water, and the boats upon it, sink to the level of the second. The flood gates are then opened, and the boats of the upper lock pass into the second. The waters of the second then flow into the third, until they are on the same level, and the boat passes without any shock or danger into the third; and so on to the bottom of the declivity.

In the same manner, a boat may pass in the opposite direction, from the lower lock to the second; and may gradually rise to the summit of the hill, without any exertion of force. This is repeated whenever a boat is to pass, and renders the navigation easy and safe.

422. Canals are often constructed around the *falls and rapids* of rivers, to aid in their navigation. But they are frequently formed along the banks of unobstructed streams, in order to avoid the inconveniences arising from the droughts of some seasons, and the floods of others, and the uncertainty and danger of a navigation depending on winds and currents.

423. *The imperial Canal of China* is the most extensive monument of human industry, of this kind, in the world. It extends 500 miles from the neighborhood of Pekin to the Yellow River. At its entrance into this stream, it is three quarters of a mile in width. Its construction, however, is very imperfect.

424. *The longest canal in Europe* is that of Languedoc, in France, which connects the Mediterranean Sea with the River Garonne. The whole distance is 140 English miles, and it is navigated by boats of 100 tons. It passes one ridge, through a tunnel 543 feet in length.

425. *The Canal of the Centre* in France, uniting the Saone to the Loire, is 71 miles long. About 4,000 boats pass annually.

The Canal of *Burgundy*, uniting the Saone to the Seine, which is partially completed, will be 148 miles in length. The Canal of *Picardy*, forming a part of the navigation from the Scheldt to the rivers of France, is remakable for two tunnels, one of which is more than 3½ miles in length, and 26 feet in width.

426. *The Canal of Kiel*, or Holstein, passes across the isthmus of Denmark, from the Baltic to the North Sea. It is the largest on the continent, admitting sea vessels of 120 tons. Sometimes 2000 of these pass in a year.

427. There are several canals which *connect the rivers of the Baltic* with one another, and with those of the Caspian and Black Seas. But they are generally of no great length; and passing through a level country, are destitute of any remarkable exhibitions of skill or labor. The *longest* is the Canal of La

doga, which passes more than 60 miles, along the bank of that lake, in order to avoid the irregularities of its navigation.

428. *England* is not excelled by any other country, for skill and enterprise in the structure of canals. More than 2,400 miles of artificial navigation have been formed in various parts of the kingdom.

429. One of the principal canals is the *Grand Trunk*, which passes from the River Mersey, 99 miles to the Trent, near the centre of the kingdom; and thence, 40 miles to the Severn; making in the whole about 140 miles. From the Grand Trunk, the *Oxford Canal* extends 90 miles to that city. From the upper part of the *Oxford Canal*, a branch of 100 miles is carried into the Thames, a short distance above London; which connects this metropolis with the great system of canals in the interior, and is called the *Grand Junction*.

The Ellesmere and Chester Canal, connects the rivers Mersey, Dee, and Severn, by two lines, crossing each other. It contains an aqueduct, of iron, 1,000 feet long, and 126 feet high; probably the largest ever constructed.

430. In *Scotland*, the *Caledonian Canal*, which connects the Murray Frith on the eastern coast, with the Atlantic Ocean, is 59 miles in length, (37 of which are in natural waters,) and is navigable for frigates of 32 guns. The *Forth and Clyde* Canal admits vessels which draw 8 feet of water. The whole expense of this canal was only £200,000, and the annual revenue varies from £40,000 to £50,000.

431. The *Grand Canal of Ireland*, extends from the Liffey, at Dublin, 83 miles, to the River Shannon. The *Royal Canal*, which is north of this, extends in a parallel line, seldom 10 miles distant from it, from Dublin to another portion of the Shannon. There are several branches extending to various rivers and towns, by which the capital is connected with the western and southern coast, and the principal towns of the kingdom.

432. In the *United States*, the *Middlesex Canal* was the first of any magnitude. It was commenced in 1790. It passes across the peninsula between the Merrimack River and Boston Harbor, a distance of 31 miles. It admits boats of 14 tons, which are drawn by one horse, 3 miles an hour. Packet boats pass down the whole length in 5 hours, and go up in 7.

433. The *next canal of importance*, executed in the United States, was from the Santee to the Cooper River, in South Carolina. It is 22 miles in length, and admits boats of 20 tons.

There are several canals in the flat alluvial delta of the Mississippi, intended to connect its various channels. A number of short canals have also been constructed to furnish a passage around the falls of rivers, in various parts of the United States.

434. *The third extensive canal* finished in the United States, was the Northern Canal of New York, from Whitehall, on Lake Champlain, to Fort Edward, on the Hudson. It passes in part through the channels of small streams, and the navigation is extended around the obstructions in the Hudson River, to Albany.

435. *The most important* canal in the United States, and the longest in the world, except the Imperial Canal of China, is the GRAND WESTERN CANAL of New York. It passes along the Mohawk River, generally above its level, to Rome; and thence westward, across the head of the small lakes, and over the Genessee River, to Lake Erie, at Buffalo.

It rises about 526 feet above the level of the Hudson River, and contains in the whole about 80 locks, with several considerable embankments and aqueducts. It was commenced in 1817, and finished in 1825.

A branch 38 miles in length, connects the Erie Canal with Lake Ontario at Oswego; and another of 20 miles, connects it with Seneca Lake.

436. Within a few years, a number of new canals have been constructed or commenced in the United States and the British Provinces; of which the following are the most important.

The *Blackstone Canal*, 43 miles in length, connects Worcester in Massachusetts, with Providence harbor.

The Cumberland and Oxford Canal, 50 miles in length, including 27 miles of ponds and streams, connects Bridgeton, in Maine, with Portland.

The Farmington, Hampshire and Hamden Canal, connecting New Haven

on Long Island Sound, with the Connecticut River at Northampton, in Massachusetts, is completed 60 miles to Westfield. Canals have also been cut around the falls of the Connecticut at Enfield and other places, so that steamboats now ascend on the river as far as Newberry, at the mouth of Wells River, in Vermont.

The Hudson and Delaware Canal connects the Hudson River at Kingston, with the Delaware, through the Lackawaxen, one of its branches. Its length is 65 miles. By the *Lackawaxen Canal and Railroad*, the communication is continued 50 miles further, to an important region of coal mines.

The Morris Canal, 100 miles long, begins at Jersey city, opposite New York, and passing through the State of New Jersey in a westerly direction, terminates at Philipsburg on the Delaware river.

The state of Pennsylvania has commenced several important lines of railroads and canals; only a portion of which are yet completed.

The great *Transverse division*, or *Pennsylvania and Ohio line*, extends from Philadelphia, by Columbia on the Susquehannah, a distance of 400 miles. It will include 83 miles of railroad from Philadelphia to Columbia, and 40 miles over the Allegany Mountains, which in one part will be elevated 2291 feet above the level of the sea.

The *Middle division* leaves the main canal a little above Harrisburg on the Susquehannah, and follows the course of that river 203 miles, to the New York state line, near Tioga Point.

The *West branch division* leaves the one just mentioned at Northumberland, near the junction of the eastern and western branches of the Susquehannah, and extends along the valley of the latter to Dunstown, 70 miles.

A *Canal* has been commenced, intended to connect Pittsburg, on the Ohio, with Lake Erie. The distance is 168 miles, but only a small portion is yet finished.

The Delaware Canal extends along the Delaware river from Bristol, 18 miles above Philadelphia, to Easton, at the junction of the Lehigh and Delaware. Its length is 60 miles.

The Lehigh Navigation consists of 47 miles of canals and pools, connected with the last mentioned canal at Easton, and uniting with the railroad leading to the coal mines at Mauch Chunk.

The Schuylkill Navigation consists also of canals and pools, extending from Philadelphia, 114 miles north-westward to Mount Carbon, a coal region near the source of the Schuylkill river.

The Union Canal, 80 miles in length, connects the Susquehannah at Middletown, with the Schuylkill at Reading.

The Conestoga Canal, 18 miles in length, connects the city of Lancaster with the Susquehannah River.

The Chesapeake and Ohio Canal, is to extend from Georgetown on the Potomac, north-westward, 340 miles to Pittsburg on the Ohio River. It will include 398 locks, and a tunnel through the Allegany Mountains 4 miles in length.

The Chesapeake and Delaware Canal, extends from the head of Chesapeake Bay, to the mouth of the Delaware River. Its length is 14 miles, and its size such as to admit steamboats and vessels of 100 tons burden to pass.

The Ohio Canal extends from Cleaveland on Lake Erie, across the State, to the Ohio River, at Portsmouth. It is 307 miles in length, and is nearly completed.

The Miami Canal, connects the Ohio River at Cincinnati, with Lake Erie at the mouth of the Maumee River. The distance is 266 miles; and it is opened 68 miles to Dayton.

The James River Canal extends north-westward from Richmond, Virginia, 32 miles.

The Roanoke Navigation, consisting of canal and sluice navigation for batteaux, is completed from the great falls of this river at Weldon, North Carolina, 244 miles, to Salem, in Virginia.

The Junction Canal connects the Roanoke and Appomattox Rivers, and including a portage of 2¾ miles, is 44 miles long.

The Dismal Swamp Canal connects the Chesapeake Bay at Norfolk, with Albemarle Sound. Its course is southward, 23 miles.

A Canal has been opened from Savannah, in Georgia, to Ogeechy River

It is to be continued to the junction of the Oconee with the Altamaha; about 100 miles.

The Welland Canal, in Upper Canada, 41 miles in length, passes around the falls of Niagara, connecting Lakes Erie and Ontario. It admits vessels of 100 tons.

The Rideaux Canal, 129½ miles long, is to connect Lake Ontario near Kingston, with Ottawas River. It is not yet completed.

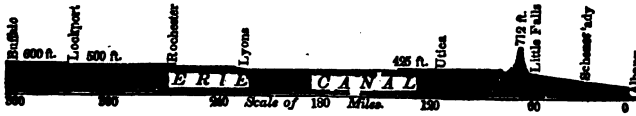
The Shubenacadie Canal, in Nova Scotia, 53 miles long, connecting Halifax harbor with the Bay of Fundy, is now in progress.

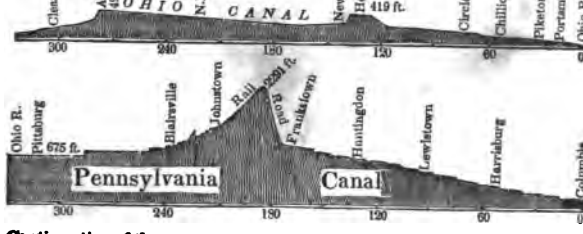
The following table exhibits the size and greatest elevation of the principal canals in the world; and the annexed sections present a view of the comparative length and elevation of the most important in the United States. In comparing it with the table of rivers (p 55), we may see the striking contrast, between the noblest works of man and the works of GOD.

TABLE OF CANALS.

Canals.	*Connecting.*	Long. miles.	Bro'd. feet.	Deep. feet.	Elev. feet.	No. of locks.
Imperial, Chinese	Pekin and Canton	500		9		
Western, New York	Hudson and Lake Erie	360	40	4	568	84
Chesapeake and Ohio	Georgetown and Pittsburg	340	48	5	1898	398
Pennsylvania and Ohio	Susquehannah and Ohio	322			2291	
Ohio State	Lake Erie and Ohio R.	307	40	4	499	49
Miami	Cincinnati and Maumee	266			175	
Penn. Middle Division	Harrisburg and N. Y. line	205			4[illegible]	
Pittsburg and L. Erie	Pittsburg and Erie					
Languedoc	Garonne and Mediterranean	140	64	6	207	103
Leeds and Liverpool	Leeds and Liverpool, Eng.	140	42	4½	483	
Grand Trunk	Mersey and Trent	140	30		326	80
Rideaux (Canada)	L. Ontario and Ottawa R.	129			125	53
Schuylkill	Philadelphia & Mt. Carbon	108	36	3½	620	125
Grand Junction	Thames and Grand Trunk	100	36	4½	395	121
Morris	Hudson and Delaware	101	32	4	915	24
Savannah and Oconee	Savannah and Oconee	195				
Oxford	Coventry Canal to Oxford	91½	30	5	195	42
Farmington	N. Haven & Northampton	87	40	4	220	60
Grand Irish	Shannon and Liffey	83	40	5	240	44
Union, Penn.	Reading and Middletown	82	36	4	119	95
Central, France	Saone and Loire	71	48	5½	400	80
West Branch, Penn.	Northumberland and Dunnsville	70			109	
Ladoga	Along Lake Ladoga	67	70	7	lev'l	
Hudson and Delaware	Hudson and Delaware	65			455	
Champlain	L. Champlain & Hudson R.	72	40	4	38½	18
Delaware	Bristol and Easton	60			170	
Caledonian	Atlantic and Murray Frith	59	110	20	94	27
Shubenacadie, N. Scotia	Halifax and Bay of Funday	53	60	8	96	16
Amsterdam, (Ship)	Amsterdam & New Dieppe	50	124	20		2
Cumberland, & Oxford, Me.	Portland and Bridgton	50	34	4		26
Lehigh	Easton and Mauch Chunk	47	60	5	364	54
Orleans, France	Loire and Seine	45	30	4½	137	28
Junction	Roanoke and Appomatox	44				
Blackstone	Providence and Worcester	45	34	4		48
Welland	Lakes Erie and Ontario	36			334	34
Forth and Clyde	Forth and Clyde	35		8	160	39
Middlesex	Merrimac and Boston	29½	30	3	104	
Dismal Swamp	Chesap. & Albermarle S.	23	40	6½	16½	6
Kiel	Baltic and North Sea	22				
Santee	Santee and Cooper Rivers	22	32	4		13
Chesap'ke & Delaware	Chesap'ke Bay & Delaware	14	66	10	12	4

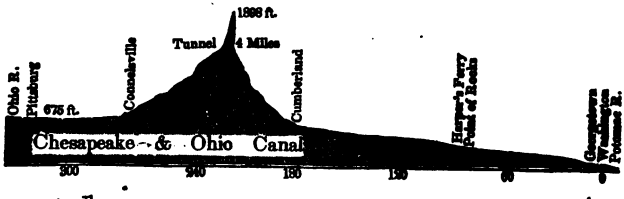
SECTIONS OF CANALS IN THE UNITED STATES.

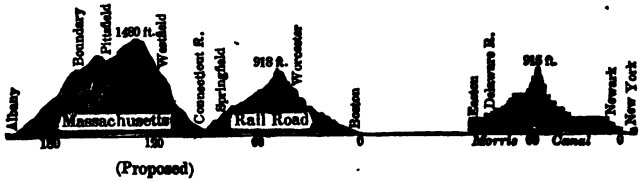




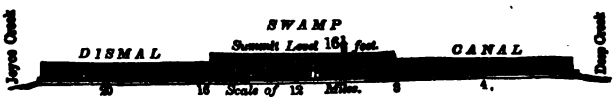
Continuation of the Pennsylvania Canal

Branch of the Chesapeake & Ohio Canal

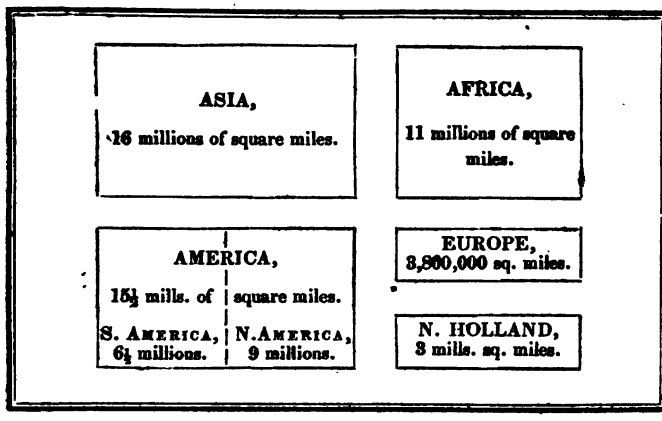




(Proposed)



GRAND DIVISIONS OF THE EARTH.



Comparative extent of the Grand Divisions.

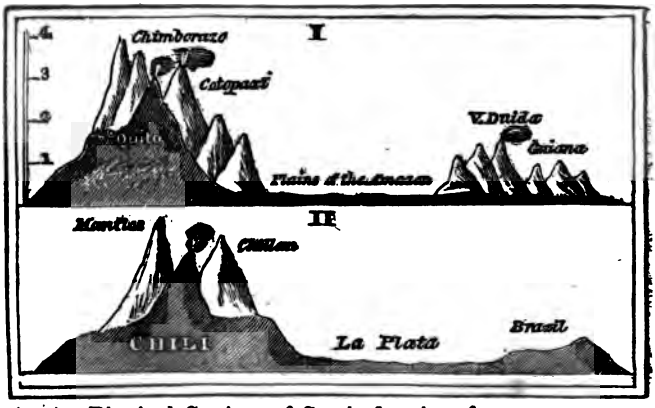
438. The *Grand Divisions* of the Earth are also natural divisions. *Africa* and *South America* are obviously mere projections of their respective continents; the former connected only by the sand-hills of Suez; the latter, by the rocky isthmus of Darien. *Europe* also is evidently a distinct projection of Asia, although the breadth of the land at its union renders it difficult to assign a satisfactory boundary; and *Asia* remains as the nucleus or centre of the old world.

The English Geographers have generally considered the boundaries of Europe as formed by the Ural Mountains, the Volga, and the Don; but the more natural and distinct course seems to be by the Ural Mountains and River to the Caspian Sea; and from the southern extremity of this sea, by the boundary of the Russian Empire, to the Black Sea. By this course we include Georgia and Circassia, where the European race exists in the greatest perfection, and whence perhaps, it originated.

The Eastern Continent is distinguished for the antiquity of its empires and cities, and the splendor of its works of art. But the Western Continent is most remarkable for the magnificence of its natural features; and excels all other divisions of the world in the grandeur of its mountains, lakes, rivers, and cataracts.

The following articles contain a connected description of the surface and natural features of each of the grand divisions, agreeably to the physical boundaries, marked by seas, mountains, and rivers.

SOUTH AMERICA.



(20.) *Physical Sections of South America, from east to west.* I. *Northern Part.*——II. *Southern Part.*

439. South America has a very irregular surface, and embraces some of the loftiest mountains, the most extensive plains and basins, and the largest rivers in the world.

MOUNTAINS.

440. *The Andes*, and their subordinate chains, give character to the whole surface of South America. The principal chain runs from north to south, its distance from the shores of the Pacific Ocean varying from one to two hundred miles; and appears to extend, as already stated, through the Isthmus, along the coast of North America. Its height is by no means uniform. In some places it rises to more than 20,000 feet, while in others, it sinks to less than 1,000 feet above the level of the sea. The whole range seems to rest upon volcanic fires, and numerous peaks are continually burning.

It is stated by a recent traveller, that Mt. Sorato, in Peru, is 25,200, and Mt Illimani, in Upper Peru, 24,200 feet in height.

441. This vast trunk sends forth *several branches* towards the east, in the southern part of the continent, nearly at right angles to its principal direction. *The most celebrated* of these secondary chains is that which stretches along the northern coast of South America, towards the island of Trinidad, and is often called the *Chain of Venezuela.* Its summits, according to Humboldt, are from 14,000 to 15,000 feet in height.

442. *The second*, or middle of these chains, leaves the main ridge between the third and sixth degrees of south latitude, and stretches towards the east to an unexplored extent, though it has been traversed for about 600 miles. Its highest points are inferior to those of the former ridge.

443. *The third lateral branch* makes almost a semi-circular sweep between the 15th and 20th degrees of south latitude, passing through the province of Chiquitos, and is hence called by Humboldt the Cordillera, or chain of Chiquitos. It appears to connect the main body of the Andes with the mountains of Brazil and Paraguay, supplying the rivers that feed the Amazon from its northern declivity, and the branches of the La Plata from the southern. Its precise direction, elevation, and structure, are but imperfectly known.

444. Different portions of the Andes present the greatest diversity of *aspect and character*. In some parts, the vast summits constitute only one ridge; but in others they are arranged in two or three. *In Chili* the breadth of the Andes is about 120 miles, forming one compact chain. *In Peru*, they divide themselves into three distinct and parallel chains, which extend to about the sixth or seventh degree of south latitude. In the province of *Quito* they form only two ridges, which unite further north. The distance of the western ridge from the sea here exceeds 100 miles; the crests are seven or eight leagues from each other; and the plain that separates their bases is five or six leagues in width. Within these narrow limits, a large population is concentrated, and towns have been built containing from 30,000 to 50,000 inhabitants each.

445. *The principal ridge* of the Andes generally rises abruptly, with numerous and frightful precipices, hiding its lofty summits in the clouds, or rising with awful majesty into the pure regions of the air above them. They are *remarkable* for the number of immense chasms, termed *quebradas*, which are found among them. They are covered with perpetual snow; but the uniform temperature of the equatorial and tropical regions prevents the formation of *glaciers*. Their declivities present all the varieties of climate and productions found upon the globe.

PHYSICAL DIVISIONS.

446. By means of the Andes and their branches, South America may be considered as *divided* into five principal parts —the western declivity—the basin of the Orinoco—the basin of the Amazon—the basin of the Paraguay—and the southern extremity.

The *western declivity* has an abrupt descent towards the Pacific Ocean, admitting only of short, rapid streams, which are often mere torrents. It is chiefly occupied by Chili and Peru. Only a small part of these countries approaches the level of the sea.

447. Between the southern and middle branches of the Andes lies the vast alluvial *basin of the Amazon*, 2000 miles in length, and 1500 in breadth, covering about three millions of square miles, or nearly half the surface of South America. In examining the northern physical section of South America, (No. 20) it will be seen that this tract is generally a plain, which rises very little above the level of the sea. The astonishing fertility of the soil, and the numerous streams which intersect it, combine with the heat of a tropical climate to produce the most luxuriant vegetation.

448. On the north of the middle range is the *basin of the Orinoco*, which is much less extensive, but not less fertile. It embraces the greater part of Venezuela, with its vast steppes or llanos, extending about 1000 miles from east to west, and pervaded by navigable streams in almost every part.

449. South of the Andes of Chiquitos is the *basin of the Paraguay*, more than a million of square miles in extent, embracing the immense plains or pampas of Buenos Ayres. The natural fertility of the soil is not less than in the basin of the Amazon; and many parts are equally productive. In other portions, the want of water, and the diminished heat of the climate, render vegetation less luxuriant.

450. *Around the ridge of Chiquitos*, is a considerable extent of elevated table-land, which seems to form the centre of the continent, and from which the country descends in all directions. It is much diversified, however, with mountains and valleys. At the heads of the Topayos and Madeira Rivers, are those barren, sandy plains, called the *Campos Parexis*, which embrace some of the most valuable gold mines of Brazil. West of the Madeira, it includes the mountainous region which contains the rich silver mines of Peru and La Plata.

451. Many of the *valleys and plains of this table-land* are very fertile; especially in Paraguay and the western part of La Plata. Their elevation in these tropical regions, renders the *climate* a perpetual spring, and enables them to furnish the productions of the Temperate, as well as of the Torrid Zone. The greater part of Chili and Peru, and the elevated valleys which lie between the ridges of the Andes, in La Plata, New Grenada, and Venezuela, have the same delightful and healthy

climate. But they are often desolated by the eruptions and earthquakes produced by the volcanic fires of their mountains.

452. The *descent from the central table-land*, towards the eastern coast, is gradual. After forming a considerable valley, the land again rises with a gentle acclivity, into the chain called the *Brazilian Andes*, which lines the whole coast of Brazil from the River La Plata to Cape St. Roque. This chain descends abruptly towards the ocean, sometimes bordering immediately upon it, and sometimes at a short distance. The greatest height is probably about 4,000 feet. The passages are difficult, and the commerce from the interior to the ocean is carried on by means of mules.

INLAND NAVIGATION.

453. *The inland navigation of South America* is entirely confined to natural streams. The rivers on the *western declivity* descend too rapidly, and have too much the irregularity of mountain torrents, to admit of any important navigation.

454. The rivers *Magdalena* and *Cauca* admit of navigation for flat-bottomed boats to the interior of New Grenada; but it is attended with considerable difficulty, and often with danger. These streams, and their branches, were used to some extent in the commerce between Europe and the countries on the western side of the Andes; and a steam-boat now travels on the Magdalena.

A branch of the River Atrato, which falls into the Gulf of Darien, rises within a few leagues of the Pacific Ocean, and might be connected with it by a canal. Another branch of this stream has long been connected by a small canal with the River St. Juan, which falls into the Pacific Ocean, and during the seasons of high water, boats pass from sea to sea.

All the produce of the mines, and other valuable exports of Peru, and New Grenada, were formerly carried over the Andes on mules, or llamas, and thence conveyed to the Caribbean Sea by some of the streams which flow into it. The chief place of communication was by means of the River Chagres, or Cruces, which empties into the sea, not far from Porto Bello. It is navigated by boats as far as the village of Cruces, whence the goods are conveyed by land, 25 miles, to Panama. It has been proposed to connect the two oceans by means of a canal at this place.

455. The *basin of the Orinoco* is furnished with great facilities for inland navigation, by means of this river and its branches; and through the Meta branch, boats can pass from the Orinoco to the foot of the Andes. But the rapidity of its current, and the variety of its eddies and counter-currents, often produce great difficulty and delay. The main stream is obstructed by falls, in passing through a branch of the Andes, at Apures. Only seven of its fifty mouths are navigable; and

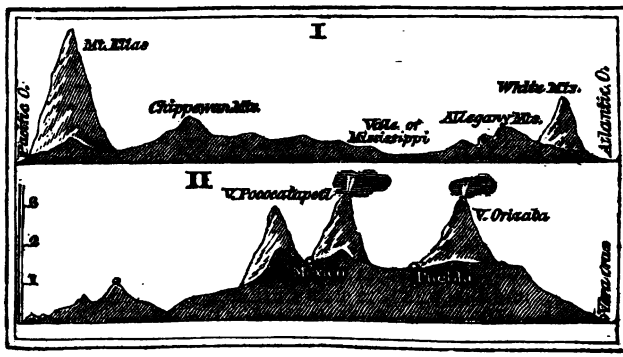
boatmen sometimes wander for days among the numerous islands of its delta, before they can find their way to the place desired.

456. The *basin of the Amazon* is traversed by numerous navigable streams. The immense size and depth of the Amazon, would admit of a ship navigation from 1,000 to 2,000 miles, did not the rapidity of its current prevent. The boat navigation extends about 3,000 miles, to the Pongo, or rapids at Jaen, where it passes a subordinate chain of the Andes. The uninhabited or savage state of the country, has prevented travellers from exploring its branches to any great extent. By means of the *Cassiquiari*, a stream which flows from the Negro, the Amazon communicates with the Orinoco, and a boat navigation is opened between the two basins.

457. The *La Plata*, or Paraguay, opens to the ocean with an estuary, 150 miles in breadth. The entrance is somewhat dangerous, on account of its sand banks, and the violent winds called *pamperos*, which frequently sweep over it from the neighboring pampas. It is said to be navigable for ships 1,000 miles, to Assumption; and for boats, about 800 miles farther.

By the *Parana, Pilcomayo, and Vermeyo*, the navigation of the La Plata is extended through a considerable tract of country to their very sources. The Parana is interrupted by a rapid in latitude 24°, which is passed with great difficulty. The Pilcomayo furnishes a conveyance to the ocean, for the rich products of Potosi and the mining regions around it.

NORTH AMERICA.



(21.) *Physical Sections of North America.*
I. From the Atlantic to the Pacific in the United States,—
II. From Vera Cruz, across Mexico.

458. NORTH AMERICA *is united with South America* on the west, by the rocky Isthmus of Darien. *On the east*, the West India Islands form a chain of connection, supposed by some to have been once uninterrupted. They appear to belong to a single chain of mountains; which may be traced from the north-western point of Cuba, through the mountains of St. Domingo and Porto Rico, and a number of lofty peaks on the Caribbean Islands, to the shores of Venezuela. Several volcanoes and volcanic mountains are found in different parts of the range.

It is *connected with Asia* on the west, by a similar chain, the Aleutian or Fox Islands, which are also the seats of volcanic fires. The two continents are only 40 miles distant, at Beering's Straits.

MOUNTAINS.

459. North America is unrivalled for the maguitude of its *lakes*, and yields only to South America in the size of *its rivers and basins;* but its *mountains* are generally inferior to those of the other grand divisions of the earth. It is traversed by *two great chains* of primitive highlands; the Rocky or Chippewan Mountains, on the western side, and the Apalachian Chain, embracing the Allegany Ridge and the White Mountains, on the east

460. The great *western chain* commences at the Isthmus of Darien, in a range of low mountains, and may be considered as a continuation of the Andes of South America. *On proceeding north*, it rises into the elevated table-land of Mexico, 9,000 feet above the sea; with its ridge of lofty peaks, termed the Cordilleras; of which Popocatapetl, and Orizaba, are the highest. The plain continues to the northern part of Mexico, and terminates in the *table-land* of the Rocky or *Chippewan Mountains;* which is about 50 miles in breadth, and forms a part of the declivity from these mountains to the Mississippi River. This table-land is probably 3,000 feet above the sea, and from it, the mountains rise abruptly into lofty peaks and ridges, interspersed with many broad and fertile valleys. Their sides present the usual varieties of climate and vegetation. The upper portions above the limits of common herbage, are almost naked, even of moss.

461. *The highest peaks* are covered with perpetual snow, and are visible 100 miles from their base. The only heights ascertained with certainty, are James' Peak, 11,500 feet, and Long's (or Highest) Peak, 12,500, which lie near the sources of the Arkansaw and Platte Rivers.* The average breadth of this chain

* Major Long's Narrative.

is from 50 to 100 miles. It runs nearly parallel with the coast of the Pacific Ocean, at the distance of several hundred miles; and probably extends to the Arctic Circle.

462. *A branch of the Chippewan Mountains* extends to Hudson's Bay, between 50° and 60° north latitude, and proceeds south-east, to the source of the Ottawa or Uttawas River. Thence it turns north-east, and runs to the coast of Labrador, separating the rivers which fall into Hudson's Bay from those which fall into the great lakes, and the St. Lawrence.

463. *Along the coast of the Pacific* is another range which seems to form a step to the Chippewan Mountains. It extends from the Cape of California, through this peninsula, along the coast to Cook's Inlet, generally rising to no great height in the southern portion. In the northern part, La Perouse states that it is 10,000 feet high; and at its northern extremity is Mt. Elias, 18,000 feet high, which is the loftiest peak of North America.

464. In following the course hitherto pursued, of tracing the mountains from south to north, we find the chains east of the Andes, entirely interrupted, except in the chain of the West India Islands, by the Gulf of Mexico, and the alluvial grounds which lie north of it.

Immediately on their borders, *east of the Mississippi River*, a confused group of mountains rises gradually from the level of the sea, to the height of 3,000 or 4,000 feet, which seems to form the root of the great *Apalachian Chain*, or the eastern chain of America. This chain traverses the United States, with few interruptions, through their whole length, extending in various ridges from south-west to north-east, nearly parallel to the coast, and dividing the streams which flow into the Atlantic, from the branches of the Mississippi and the great chain of lakes.

465. The *Allegany Ridge* is the principal or central ridge and sometimes its name is given to the whole chain.* It *commences* in the northern part of Georgia, and forms the boundary between North Carolina and Tennessee, under the names of the White, Smoky, Bald, Iron, and Yellow Mountains, which are given to various parts according to their appearance. *On entering Virginia*, it assumes the name of the Allegany Ridge, which it retains through Virginia, to its apparent termination in Pennsylvania. It is sometimes considered as continuing by a range of highlands, till it terminates in the Catskill Mountains, west of the River Hudson.

* It is thought advisable, to avoid the confusion which would arise from this, by substituting the name, Apalachian.

466. *Two considerable branches* from Tennessee, unite with the Allegany ridge; the Clinch Mountains, on the south side of the Tennessee River, and the Cumberland on the north. The Cumberland Mountains commence near the River Ohio, and separate the Rivers Kentucky and Tennessee, through their whole course.

467. The *Blue Ridge* is a lower subordinate chain, which lies between the Allegany Ridge, and the Atlantic Ocean. It commences near the same spot with the Allegany Ridge, and traverses the Atlantic States, at the distance of 50 or 100 miles from the coast, until it terminates at West Point, on the Hudson River.

468. Here the Blue Ridge appears to be connected with the *Taghonnuc Range*, which passes through the western part of Connecticut and Massachusetts, and unites with the *Green Mountains*. Considerable branches also pass off, connecting the Green Mountains with the range of the *White Mountains*, which gradually diminish in height, and *terminate* near the Gulf of St. Lawrence, in the highlands that separate the waters of this gulf from those of the Atlantic, and form the northern boundary of the United States.

469. *In Virginia and Pennsylvania* there are a number of *ridges* west of the Allegany, which occupy most of the western portions of these states. In Pennsylvania, the two principal between the central ridge and Pittsburgh, are the Laurel Ridge, and Chesnut Ridge.

470. *The general breadth of the Apalachian chain*, is from 100 to 180 miles. Its *course* is nearly parallel to the coast. In point of *height*, it is surpassed by most of the great mountain chains of the globe. The *loftiest summit* is Mount Washington, the principal peak of the White Mountains, which rises 6,634 feet above the level of the sea.

The average height of the Apalachian chain south of New-York, is from 1,000 to 2,000 feet. No portion attains the height necessary for perpetual snow, or the production of glaciers.

Moose Hillock, in New Hampshire, is 4,636 feet in height; Mansfield Mountain and Camel's Rump, in Vermont, Saddle Mountain in Massachusetts, Round Top, among the Catskill mountains, Otter Peak, in Virginia, and Table Mountain in South Carolina, are about 4,000 feet high.

471. Although some parts of the range are primitive, there are few examples of the rugged, awful *character* exhibited by the Alps and the Andes. The summits are generally rounded, and the declivities accessible with comparative ease.

472. *The White Mountains* of New Hampshire have more of

the rough precipitous appearance of primitive mountains, than most others in the United States. They are diversified with deep chasms, and numerous cascades descending from precipices, forming some of the most sublime and romantic scenes which our country presents. They comprise a long range of proud eminences, of which Mount Washington is the commanding peak. During nine, ten, and sometimes eleven months of the year, their summits are covered with snow; and in clear weather, they are surrounded or capped with white fleecy clouds.*

These circumstances have given them their name, and render them visible to a great distance at sea in serene weather. They are surrounded with three zones above the region of cultivation. The first is covered with a growth of stunted evergreens, a few inches in height; the second produces nothing but moss; and the upper region is a mass of naked rocks.

473. *The northern primary region of the United States*, or New-England, is traversed by a system of mountains, whose ranges generally follow the course of its rivers. The principal and *central range* is that of the *Green Mountains*, which commences in Connecticut, and passes through Litchfield county, into Massachusetts and Vermont, declining in height as they approach the 48th degree of latitude, and thence forming the highlands between Maine and Lower Canada.

The principal peaks are Mt. Tom, in Litchfield county, Connecticut; Killington Peak, near Rutland; the Camel's Rump, 14 miles south-east of Burlington; and Mansfield Mountains, north-east of this place in Vermont.

474. On the west of the Green Mountains, is the *Taghonnuc* Range, which commences near Norwalk, in Connecticut, and passing through the western parts of Massachusetts and Connecticut, unites with a low spur of the Green Mountains, south of Middlebury, in Vermont.

475. *The principal eminences in this range*, are Taghonnuc Mountain, in the western part of Massachusetts, and a spur, called from its form, Saddle Mountain, which passes off near the northern boundary of Massachusetts, through Williamstown.

Saddle Mountain is the highest point in Massachusetts, 4,000 feet above the level of the sea. Its length is about six miles, and it is visible at great distances, from the surrounding states.

476. On the *east of the Green Mountains*, is a range which commences at East Rock, near New Haven; and forming in its course the peak of Mount Carmel, and the Farmington and Talcott Mountains, it passes the Connecticut River at Northampton, and leaves a channel for its waters between

* Dwight's Travels, from which the account of New England is chiefly taken

Mount Tom and Mount Holyoke. A similar, but lower range, which runs from Lyme, near the mouth of the Connecticut River, and has been called the *White Mountain Range*, passes through Massachusetts and New Hampshire, to the northern boundary of the United States.

The chief eminences in these ranges, are Mount Tom, Mount Holyoke, and Mt. Toby, near Sunderland, in Massachusetts; Monadnock, near the southern boundary of New Hampshire; Sunapee Mountain, near Fishersfield; Moose Hillock, eight miles from Haverhill; and the White Mountains. Ascutney, near Windsor, in Vermont, and Wachuset, in Princeton, Massachusetts, are two detached mountains about 3,000 feet in height.

477. *In New Hampshire*, there are several ranges which pass from east to west, uniting the White Mountain Range with the Green Mountains.

478. Little is known of the *mountains of Maine*. Mount Katahdin is a lofty peak, which has not yet been examined or measured.

PHYSICAL DIVISIONS.

479. The great mountain chains of North America, divide it into *four principal declivities*:—1. The western declivity, of the Chippewan Mountains; 2. The northern declivity, descending from the head waters of the great lakes, towards the Arctic Ocean; 3. The eastern declivity, of the Apalachian Chain; and 4. The great southern declivity, or basin of the Mississippi, which may be considered as extending along the shores of the Gulf of Mexico, to the foot of the Cordilleras. The *basin of the St. Lawrence* forms another grand division of the continent, lying between the northern and southern declivities.

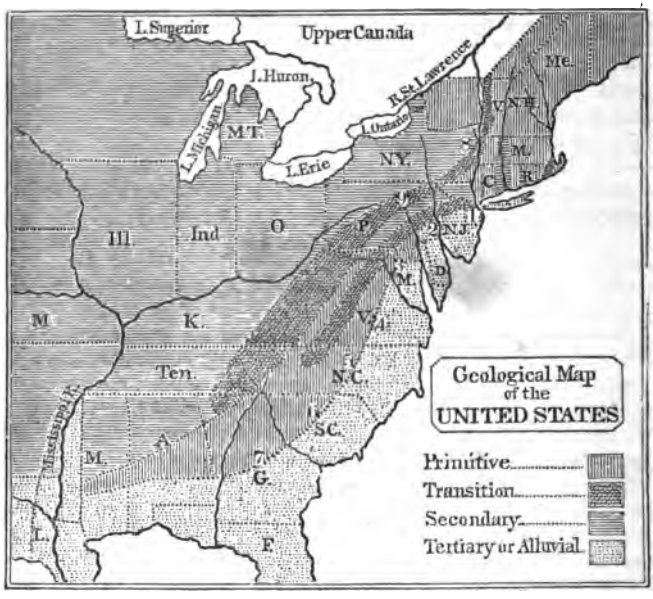
480. *The western declivity* of the Chippewan Mountains is chiefly inhabited by Indian tribes, and has been very little examined. The *southern portions* forming a part of Mexico, are well watered and fertile.

The great table-land of Mexico is a very productive region, so elevated that it enjoys the climate of the Temperate Zone, far within the tropics. The only defect is the want of water, which is sometimes destructive to their harvests.

481. *The northern declivity*, extending from the highlands bordering on the lakes, to the Arctic Ocean, is also little known. From the discovery of coal and salt springs by Mackenzie, it is supposed to be a continuation of the great secondary region of the Mississippi. It has numerous rivers and lakes; but it appears to resemble Siberia in its dreary aspect and inhospitable climate, and affords a scanty subsistence to the Indians who wander over it, in pursuit of game and furred animals.

482. The eastern, or *Atlantic declivity*, comprises the primary region east of the Hudson River; and the alluvial or tertiary region, extending from the Hudson, south to the Gulf of Mexico.

The geological divisions of the United States will be most easily understood from an inspection of the following map.



The letters are the initials of the States. The figures refer to the places mentioned below. The formations are indicated by the various modes of shading, as explained on the map.

1 New York.	4 Richmond.	7 Milledgeville
2 Philadelphia.	5 Raleigh.	8 Albany.
3 Washington.	6 Columbia.	9 Williamsport.

483. *The alluvion of the eastern declivity*, commences on the southern shore of Long Island, and extends between the Atlantic Ocean and the primary ridges of the Apalachian Chain, until it passes round the southern extremity of these mountains, and unites with the basin of the Mississippi on the shores of the Gulf of Mexico.

It is *bounded* on the interior by a line commencing a little below Newark, in New-Jersey, extending north of Amboy, to

the river Raritan, and thence pursuing a south-west course to Trenton, Philadelphia, Baltimore, and Washington, nearly parallel to the coast, to Augusta, on the Savannah River, and thence to Natchez on the Mississippi, as exhibited on the map.

484. The *shore* is low and sandy. The *elevation* gradually increases in proceeding south. The tide extends through the whole alluvion, on all the rivers north of the Roanoke, but below this, it does not reach the western boundary. Through the whole formation, there is very little that deserves the name of rock. The great mass below the soil is composed of sand, gravel, pebbles, shells, clay, and marl, arranged in distinct and extensive beds.

A bed of shells, sometimes cemented into shell-limestone, extends from Eutaw Springs, on the Santee River, to the Savannah River, and the Chickasaw Bluffs, on the Mississippi. It is 600 miles long, from 10 to 100 broad, and in some parts, 300 feet thick. In other parts, the gravel and sand are converted into a loose, friable sandstone. The whole tract is considered by some as belonging to the *tertiary class*. Remains of vegetables are found at the depth of one hundred feet in various places.

485. The *character* of the alluvion varies, according to the nature of the countries lying at the head of its streams, and from which its materials may be supposed to have been derived.

The sources of the streams north of the Rappahannock are chiefly in the transition and secondary formations; and the alluvion on the bays, in a part of Virginia, Maryland, Delaware, and New-Jersey, is very fertile.

The streams south of the Rappahannock, as far as the Altamaha, rise in the primitive portions of the Allegany Ridge. Hence the waters forming the alluvion, can bring down only sand, or gravel, or the hard materials of primitive rocks, which produce a more sterile soil in North and South Carolina, and a part of Georgia and Virginia. The region south and west of this, is chiefly an alluvion from secondary regions, and is extremely fertile.

486. *In the states south of Maryland*, those tracts which are low and moist are soon covered with vegetation, from the heat of the climate; and the accumulation of vegetable soil renders them fertile. The same heat renders the dry tracts more sterile; and there is a greater contrast between the rich and poor soils in this region than in colder climates.

487. *The primitive formation of the United States*, rises into the most elevated ridge of the Apalachian Mountains, through the greater part of their length, separating the Atlantic declivity from the basin of the Mississippi.

It *commences* at Milledgeville, in Georgia, and is *bounded* on the east by the line of the alluvion just described, as far as the

Hudson River. It then *expands*, and covers the whole of New-England, and the north-eastern part of New-York, extending an unknown distance to the north. It gives to the eastern section of the United States, the usual rugged character of a primary formation.

488. *On the west*, it extends nearly to the borders of Tennessee. It is thence bounded by a line of transition rocks, which separates it from the secondary basin of the Mississippi; running north-east, across the Blue Ridge West of Washington, and a little west of Philadelphia and Easton, in Pennsylvania, to New-burgh, on the Hudson, and the eastern boundary of New-York. This region, however, contains several tracts of secondary and transition rocks.

The great transition formation passes between the primary of New-York and New-England, east of Lake Champlain. A district of transition rocks also extends from Rhode-Island to Boston; and another narrow strip from the Delaware to the Yadkin River. A secondary region extends from New-Haven, along the Connecticut River, to Vermont; and another from the Hudson to the Rappahannock, which covers the primitive in New-Jersey. Richmond has a secondary coal formation. The banks of streams, lakes, &c. present many examples of limited alluvions.

489. *A remarkable granite, or gneiss ridge*, forms the boundary between the primitive and alluvial formation, which is believed by some to have been the ancient line of the sea coast. It crosses Long Island Sound, at Hurl Gate near New-York; the Delaware, at Trenton; the Susquehannah, at the rapids near its mouth; the Potomac, at Georgetown; the Rappahannock, at Fredericksburg; James River at Richmond; and the Roanoke, at Halifax; producing rapids or falls which obstruct navigation, in all these streams except the Potomac.

490. *The transition formation* occupies a long but narrow tract, bordering on the primitive, extending from 20 to 100 miles to the west. It is described by Maclure, as extending on the west to Lake Champlain, and bounded by a line passing through Albany, below Tioga, through Williamsport, (Penn.) and thence south-west, to the western boundaries of Maryland and North Carolina. It embraces the coal mines of the Susquehannah and Lehigh, the rich valley of the Shenandoah, and the region of the most celebrated mineral springs of Virginia.

491. The great *secondary region* of North America, or the basin of the Mississippi, occupies the centre of the continent, and extends from the Hudson River and the boundaries of the transition region, to the basin of the St. Lawrence; and beyond the Mississippi, probably to the foot of the Rocky Mountains. On the south, it is bounded by the alluvion of the coast, without any intermediate formation.

492. The basin of the Mississippi is traversed by *three distinct ranges of mountainous country*, besides the branches of the Apalachian chain.

The *Ozark Mountains*, run north-east from the Red River, across the Arkansaw, and between the heads of the Osage and White Rivers, to the confluence of the Missouri with the Mississippi; and thence are continued in a low range of hills, towards lake Superior.

They pursue the same course with the Apalachian chain, but are much inferior in height. There are no elevated peaks; but the whole form a mountainous tract, from 100 to 150 miles in width, and rising in some parts, 1,500 or 2,000 feet above the level of the sea. Like the Apalachian Mountains, they have a basis of primary rocks, covered by secondary rocks, which form their highest points. They abound in metallic minerals, especially lead and copper.

The Wisconsin, or *Ouisconsin Hills*, are a range of hilly, broken country, commencing on the Ouisconsin River, and extending north to Lake Superior. They resemble the Ozark Mountains in their geological character, and metallic productions; and appear to be a continuation of them.

The *Black Hills* separate the Yellow Stone, and its branches, from the Missouri.

493. The whole *basin* of the Mississippi is generally *characterized* by the fertility of secondary and alluvial countries; and extends through such a range of latitudes as to furnish the principal productions of hot and cold climates.

494. *The delta of the Mississippi*, and the alluvial regions lying around the Gulf of Mexico, include the states of Louisiana, Mississippi, and Alabama. The inexhaustible fertility of the soil renders them luxuriant in every production adapted to the climate.

495. *In the middle of the basin*, east of the Mississippi, is a mountainous region, embracing the greater part of Kentucky and Tennessee, and the western parts of Virginia and Pennsylvania, between the Ohio and the Allegany mountain. It abounds in hills, elevated near the Ohio, from 400 to 1,000 feet above the river, and higher in the neighborhood of the mountains.

This region rests upon limestone, which gives great fertility to its soil; but abounds so much in fissures and caves, that it is liable to extreme drought in the summer, by the sinking of the water. It is in some degree rugged; but enjoys a temperate, healthy climate, and is capable of a high degree of cultivation.

496. *The northern division* of this part of the basin, between the Ohio, the Mississippi, and the lakes, embraces the states

of Ohio, Indiana, Illinois, and the North-Western Territory It may be divided into three parts; the hilly country, the plain country, and the valley country.

497. *The hilly country* occupies about one-third of the surface, extending from the Allegany Ridge, and the hilly districts of New-York and Pennsylvania, to the ridge running from the mouth of the Wabash to the eastern part of Lake Erie, which divides the waters of the Wabash and Lake Erie from the branches of the Ohio. Its surface is uneven, and in many places, rugged and broken; but a large part of it is susceptible of cultivation.

No high mountains are to be seen. The hills usually rise from 600 to 800 feet above the common level, which is about 1000 feet above the level of the streams, or the water-table of the country. They invariably present rounded summits; and the soil is generally productive. Numerous fine tracts are interspersed among the hills, and the valleys of the streams are extremely fertile. The banks of the streams are usually abrupt and precipitous, and the channels deep.

498. *The plain, or undulating country*, extends from the hilly region to Lakes Erie and Michigan, and the Fox and Ouisconsin rivers. On entering this tract, the land gradually changes from a rough to an undulating surface; not entirely destitute of hills, but rising into broad and gentle swells in some parts, and subsiding into extensive plains in others. Three-fourths of this region is occupied by prairies or savannahs remarkable for the richness of their soil. They yield a spontaneous and luxuriant growth of herbage, but are only skirted with trees.

499. The country is so little inclined, that the *streams* flow sluggishly, the water of *rains* stagnates on the surface, and the *exhalations* render the air moist and unhealthy. Extensive tracts are well *adapted for settlement*, but many parts of the country must remain uninhabited for years, on account of the scarcity of timber, and the deficiency of mill-seats and springs.

500. The *valley country* embraces the alluvial tracts in the vales of the streams usually called *bottoms*. They are composed of alternate layers of sand and soil, deposited by the streams; and vary in fertility, according to the nature of the formation from which the streams originated. In the vale of the Ohio, the quality of the soil appears to improve from its source downward.

The climate of the valley country is, almost without exception, unhealthy; but cultivation will gradually diminish, and perhaps remove the causes of disease, by clearing the land of putrefying vegetation.

The most extensive tract of valley country east of the Mississippi, is called the *American Bottom*, extending about 81 miles on the Mississippi, from the Kaskaskias to the Missouri. Its average breadth is four miles, and it is considerably elevated above the present level of freshets. It is generally very rich, and is desti-

tute of timber, except on the margin of the river. Other bottoms of great extent are found below the junction of the Missouri. The Ohio bottoms are uniformly covered with deep forests, and have no prairies of importance.

501. *The country lying between the Mississippi and Missouri*, above their junction, contains no mountains of any magnitude. It is not without abrupt hills and precipices; but is characterized by an undulating surface, variegated by broad river vales, and tracts of upland. It is almost destitute of *forests*, and only chequered with stripes of wood land on the borders of the streams. The *bottoms* on the Mississippi and Missouri are very rich, and generally covered with timber; but *prairies* become more numerous in going upward from their junction. The *soil* of this region is probably equal, if not superior, to that of any other tract of upland in the United States; but the scarcity of *timber, mill-seats, and springs*, must for a long time impede its settlement.

502. *The tract extending south of the Missouri*, to the Red River, between the Mississippi, longitude 96° west, has a surface much diversified. An extensive bottom lies on the Mississippi, extending from the Ohio to the Red River, which contains large *swamps* of cypress-trees, almost impenetrable from the under growth of shrubs. The Great Swamp, the most considerable of these, commences near the head of this tract, and stretches about 200 miles in length, and from 5 to 30 in width.

The lowlands on the Mississippi are bounded by *the region of the Ozark Mountains*. With the exception of the alluvial tracts on the borders of the streams, it is extremely hilly and broken. The mountains rise from 800 to 1,800 feet above the streams, with rounded summits and often perpendicular cliffs, and have a rocky surface, which admits only a scanty growth of timber. The portion on the Missouri and its branches, resembles the country north of the Missouri, in the prevalence of prairies and the scarcity of trees. The southern part is better supplied with forests. The streams are rapid and furnished with mill-seats.

503. From longitude 96°, or the meridian of the Council Bluffs, to the Chippewan Mountains, is the *Great American Desert*, a desert region of 400 miles in length and breadth, or about 160,000 square miles in extent. The hilly country last described, gradually subsides to a level but undulating surface, with nothing to limit or variegate the prospect, but here and there a hill, knob, or insulated tract of table-land.

On approaching within 100 miles of *the Rocky Mountains*, their snow-capped summits become visible. Here the hills become more frequent; elevated rocks more abundant; and the soil more sterile, until we reach the abrupt chain of peaks which divide it

from the western declivity of North America. The surface is generally naked, and not a thousandth part is covered with trees.

This tract is separated from the Chippewan Mountains by a range of sand-stone ridges, presenting abrupt and precipitous fronts. They resemble ruins and works of art, and form scenery of a grand and interesting character.

The insulated table-lands rise from 600 to 800 feet above the common level, surrounded, in many instances, by rugged slopes and precipices, and give to the whole tract a singular appearance. Their surface is usually waving, and occasionally rises in knobs several hundred feet high. They are sometimes covered with stunted trees, but are often nearly bare.

504. The *predominant soil* of this region is a sterile sand, and large tracts are often to be met with, which exhibit scarcely a trace of vegetation. The streams are broad and shallow, and running through a bed of sand, are liable to become dry in the hot season. The valleys of the rivers and creeks are usually sunk 150 or 200 feet below the common level of the country; they are bounded, in some places, by perpendicular precipices; and in others by bluffs or banks of gentle slope. Many of them are rich, especially near the mouths of the rivers; but towards their sources become sterile.

The *salts and magnesia* mingled with the soil, are often so abundant as to destroy vegetation. The waters are to a great extent impure, and frequently too brackish for use.

The valley of the Canadian River is incrusted to a great extent, with salt nearly pure, resembling ice or snow in its appearance. The waters of the river are so impregnated with salt as to be unfit for use; and this is the case with other tributaries of the Arkansaw and the Red River. These streams are also tinged with a deep red, from the soil over which they flow.

"In regard to this extensive section," says Major Long, "we do not hesitate in giving the opinion that it is almost wholly unfit for cultivation; and of course uninhabitable by a people depending upon agriculture for their subsistence."

Although tracts of fertile land, considerably extensive, are occasionally to be met with, yet the scarcity of wood and water, almost uniformly prevalent, will prove an insuperable obstacle in the way of settling the country. According to the best intelligence we have, the country both northward and southward of that described, commencing near the sources of the Sabine and Colorado, and extending to the northern boundary of the United States, is throughout of a similar character.

505. The *basin of the St. Lawrence*, comprising the great lakes, is a narrow tract, bounded on both sides by ranges of highlands, which separate its waters from those of the surrounding declivities. It resembles the basin of the Mississippi, with which it is intimately connected, in its geology and soil, from lake St. Clair to Montreal. The northern parts of the state of Illinois, Indiana, Ohio, and New-York, and the north-eastern part of Pennsylvania, which belong to this basin, are generally level, and are

equal in fertility to any part of the United States, of the same extent.

506. The *basin of the Columbia river* is about 900 miles long, and 400 broad. It embraces many fertile tracts, some of which are prairies, and others covered with heavy timber. Its climate is mild; and its streams abound in fish, which support numerous villages of Indians on their banks.

INLAND NAVIGATION.

North America is traversed by *two great rivers*, the Mississippi and the St. Lawrence, by which navigation is extended to a great distance into the interior.

507. The Mississippi and its branches drain the great central basin, which lies between the Allegany and Chippewan Mountains. On the Mississippi, the navigation for boats of considerable burden, extends to the Falls of St. Anthony. On the Missouri, which is the largest, and in fact the principal stream, it reaches to the Gates of the Rocky Mountains.

From the secondary character of the country, the numerous *branches* of these great rivers are generally navigable, and afford a passage from almost every part of the Western States, and the vast regions at the base of the Rocky Mountains, to the Gulf of Mexico and the Ocean, at least during the season of high water, from the spring to the middle of the summer.

508. The *current* of the principal streams is so rapid, that although their depth would admit vessels of considerable size, the navigation is chiefly by means of steam boats. Even the ascent from the mouth of the Mississippi to New Orleans is so difficult, that vessels are sometimes delayed 30 days.

The Navigation of the Mississippi is attended with some danger, from the numerous trees fixed in its bed, which are called by the boatmen *planters* and *sawyers*, and are as fatal to the boats as reefs of rocks. Below Natchez, these dangers are obviated by the depth of the water. Above this place, they become more and more numerous, and difficult to pass: but the main channel, though intricate, affords depth of water in all stages, sufficient for boats of 5 or 6 feet draft, to the mouth of the Ohio. From this point to the mouth of the Missouri, 220 miles, the navigation is obstructed by shoals at low water, which will not admit boats drawing more than 3 feet. The current probably averages 3¾ miles an hour.

509. The obstructions to the navigation of the *Missouri* resemble those in the Mississippi, but are much greater. This

stream is rapid and turbulent. No part of it is free from rafts, bars, snags, or other obstructions, and the channel is very intricate. From March to July or August, it is raised by freshets to such a height as to admit boats of any burden; but during the remainder of the year, it can scarcely be called navigable, except for boats drawing 2 or 2½ feet of water. Its velocity in a middle stage of water is 4½ miles; in freshets, 5½ an hour. It is usually blocked up with ice during the winter.

510. The *Ohio* is navigable for boats of considerable burden, from the middle of February to the latter part of June, and again a few weeks during the freshet in the Autumn. The falls at Louisville can be passed by large boats, only in the highest water. During low water, boats of small burden cannot pass some other rapids and shoals; and the river is fordable in many places.

511. The *Arkansaw* is the next branch to the Missouri in size. It has only short periods of floods, and will not admit boats of considerable burden. A part of its channel is sometimes dry. The *Canadian*, a branch of the Arkansaw, 1,000 miles in length, leaves its channel dry, during a large part of the summer.

512. The *Red River* is navigable most of the year to the Great Raft, a collection of timber which closes the passage, 500 miles from its mouth. The *River St. Francis* is blocked up at its mouth by rafts of logs and drift wood, which entirely prevent the passage of boats.

513. The *branches of the Missouri* are usually blocked up at their mouths after the freshets in July until the next spring, with mud, brought down by the Missouri. They are of course navigable only during the freshets.

The *Platte* is a broad, shallow stream, fordable in almost every part, and navigable only for canoes of skins. The *Yellow Stone* is nearly as large as the branch which takes the name of the Missouri, and is navigable throughout the greater part of its course.

514. The St. Lawrence is navigable nearly to Montreal for vessels of 600 tons burden, where it is obstructed by rapids. The boat navigation continues above these to Ogdensburgh, whence large vessels may be navigated 170 miles, through Ontario to Niagara. By means of the Welland Canal, vessels drawing 6 or 7 feet water may now pass into Ontario; and thence small vessels may proceed to Huron, and boats by a canal to Superior.

Above the falls of Niagara there is a navigation of 231 miles through Lake Erie, for vessels of 60 or 70 tons. The navigation continues by the straits of Detroit, 28 miles; Lake St. Clair, 20 miles; and the River St. Clair, 60 miles, to Lakes Huron and Michigan. Between Lakes Huron and Superior are the *Ra-*

pids of St. Mary's Straits, along a part of which, a canal has been formed by the British North-West Fur Company, for the convenience of their traders.

515. The *common route of the fur traders* in their bark canoes, is from the St. Lawrence through the Ottawa or Grand River, and thence by a short portage to Lake Nipissing, and down the French River into Lake Huron. This route is one third shorter than that through the great lakes.

From Lake Huron, they proceed through the Straits of St. Mary, and Lake Superior, to the Grand Portage, 9 miles in length, which brings them to the great northern chain of lakes, beginning with the Lake of the Woods, at the distance of 1,000 miles from the place of their departure.

The River St. Lawrence, above Quebec, and a great part of the lakes, are frozen over from the beginning of December till April; but an easy and rapid conveyance is afforded over the ice by means of sledges.

516. *Lake Champlain* is a tributary of the St. Lawrence, emptying into it by the River Sorel, or Richelieu. Vessels of 150 tons may ascend this river 12 or 14 miles; and boats, to Chambly or St. Johns. From this place, there is ship navigation of 160 miles on the lake, to the shores of Vermont and New York.

The *River St. Francis*, one of whose branches rises in Lake St. Francis, and another in Lake Memphremagog, is also a channel of navigation to the St. Lawrence.

517. The numerous RIVERS ON THE EASTERN DECLIVITY of the Apalachian chain, afford the advantages of a good inland navigation to most parts of the Atlantic States. In all those streams which flow through the alluvial region, from the Mississippi to the Roanoke, the *tide waters* of the ocean terminate at some distance from the foot of the mountains, varying from 30 to 120 miles. From the Roanoke to the Delaware, they extend through the alluvial region, to the base of the primitive hills; but in no river south-west of the Hudson do they pass beyond the alluvial region. As far as the tides flow, the streams are generally navigable for sloops.

518. *In passing from the hilly and primitive, to the flat and alluvial region*, the streams are almost uniformly precipitated over ledges of rocks, by rapids which obstruct their navigation Indeed, the boundary of the alluvion marks the limits of navigation from the sea. It passes through Milledgeville on the Altamaha—Augusta on the Savannah—Columbia and Camden on the Santee—Richmond on the James—Fredericksburg on the Rappahannock—Georgetown on the Potomac—and Trenton on the Delaware. Above the rapids, navigation is performed entirely in boats propelled by oars or poles, or drawn up by ropes, or by means of the bushes growing on their banks.

519. The *Savannah River* is navigable for ships to Savannah, and for boats 350 miles to Augusta. The *rivers of South Carolina* are navigable nearly through the alluvial region, and

there are some good *harbors* at their mouths. That of *Charleston*, which is formed by the Ashley and Cooper Rivers, is excellent; and is connected by Cooper River and the Santee Canal, with the Santee River.

520. The *coast of North Carolina* is lined with a range of low, sandy islands, enclosing a chain of sounds. Their entrances are generally obstructed by bars, and no vessels of considerable size can enter. But the *streams* are navigable for sloops some distance into the interior.

521. The *Chesapeake Bay* is of itself an inland sea of considerable size; and with the numerous streams and inlets on its borders, forms an important channel to the ocean for a large extent of country, comprising the whole of Maryland, and the eastern declivity of Virginia; and extending through the middle section of Pennsylvania, nearly to the small lakes of New York. The largest ships have access to its shores, and proceed to some distance in several of its streams. Not far from the entrance of the Bay are *Hampton Roads*, the first anchoring ground for vessels from the ocean.

522. The *James River*, is navigable for large ships to Jamestown, and for sloops to Richmond. Around the falls at this place, and several obstructions above, canals are formed, which extend the boat navigation 227 miles above Richmond.

523. The *Potomac* is navigable for ships of any burden, to the navy-yard at Washington; and this is the most inland point in the United States, to which the largest vessels have access. Above Washington, there are five falls on this stream, which are rendered passable by *canals*. A boat navigation is thus opened to its sources, which are connected with the waters of the Mississippi by the great Cumberland Road.

524. The *Susquehannah* is obstructed at its entrance into Chesapeake Bay, by a series of rapids, extending 40 miles, to Columbia, which can scarcely be ascended by boats. Attempts have been made at great expense, to remove these obstructions; and *a canal* of one mile in length has been cut around the Conewago Falls, 20 miles above Columbia. But the navigation of this river is still so difficult, that the *trade* is principally confined to the conveyance of timber in rafts, and of produce in large flat boats, termed *arks*, from the interior to the bay. Above the falls of Conewago, there are few obstructions in the Susquehannah to the boundaries of New-York, and batteaux may ascend to its very sources.

525. The *Delaware Bay and River* are navigable for the largest *ships* as far as Philadelphia; but the ascent is often much retarded by the current. *Sloops* ascend to the falls at Trenton, and

boats of 8 or 10 tons, 100 miles farther, to Easton. This river, with its branches, the *Schuylkill* and *Lehigh*, affords inland navigation to a long, though narrow section of country, comprising the eastern part of Pennsylvania, and the western part of New Jersey.

A *canal* now connects the Schuylkill with the Susquehannah, and thus opens a direct navigation from the basin of the Susquehannah to Philadelphia and the ocean. The Lehigh, one of its branches, has been rendered navigable for a part of its course, to open a conveyance from the extensive beds of coal, upon its banks.

526. The *Raritan River*, in the northern part of New-Jersey, is navigable for sloops to Brunswick, within 28 miles of the head of sloop navigation on the Delaware; and the Passaick and the Hackensack afford a short inland navigation. But the dry, sandy region of New Jersey on the south, and the mountainous portion on the north, have no navigation except from their borders; and there are few harbors on the eastern coast.

527. The Hudson is the only river in the United States in which the tide passes through the alluvial, primitive, and transition formations. It is navigable for *ships* to the city of Hudson, and *sloops* of considerable burden pass through all the formations, to the falls of the secondary country, above Troy, which is 165 miles from the ocean. This is the most distant point to which the tides flow, and sea-vessels can approach in a direct line, in the United States. At its mouth, this river forms the harbor of New York, which is considered one of the finest in the world. The *Northern Canal* connects the Hudson with the borders of Lake Champlain and the St. Lawrence; and the *Western Canal* with the upper lakes, and the rich secondary region which occupies the centre of the state. This river is thus made the grand artery of an inland navigation, by which the wealth of this vast tract of country will flow to the city of New-York.

528. In the *rivers* of the United States, *east of the Hudson*, the tide extends only a small distance, and the navigation is obstructed by the falls and rapids which are common in primitive countries.

529. The *Connecticut River* is navigable for vessels of considerable size, 50 miles, to Hartford. Several canals and locks have been constructed on this river, at South Hadley, Hanover, and some intermediate rapids, which extend the navigation for steam boats to Newbury, at the mouth of Wells River, in Vermont. In the eastern part of Connecticut, the *Thames* is navigable for sloops to Norwich, and forms the fine harbor of New-London at its mouth.

530. *Narraganset Bay*, and the streams which empty into it, afford easy access from the ocean to every part of Rhode Island. A canal extends from Worcester, in the interior of Massachusetts, to Providence, and furnishes an easy conveyance for fuel and produce to this flourishing sea-port.

531. The *Merrimac* of New Hampshire, is much obstructed by rapids; but its upper waters are connected with Boston harbor by the Middlesex canal.

532. The *rivers of Maine* are generally obstructed by falls and rapids. The Penobscot, the St. John's, and the western branch of the Kennebec, afford a boat navigation nearly to their sources. The heads of these rivers approach within no great distance of the waters of the St. Lawrence; and the portage from the head of the Kennebec to that of the Chaudiere River, is only five miles.

533. The basins of the River St. Lawrence, and the Mississippi, and the Atlantic declivity are so intimately connected, that it would not be difficult to unite them by an inland navigation; and much progress has been made in accomplishing this important object.

534. *The waters of the St. Lawrence, or the great lakes, have two natural communications with the branches of the Mississippi* at particular seasons, by means of the Fox and Chicago Rivers, both emptying into Lake Michigan. A short canal would render either of these communications permanent.

The *Fox River*, which flows into the branch of Lake Michigan called Green Bay, rises near the *Ouisconsin* branch of the Mississippi, and afterwards flows within 1½ miles of its channel, separated from it only by a short portage, over a prairie. During the season of high water, this river is easily navigable, and the intervening ground is overflowed, so that loaded boats may pass to the Ouisconsin, which affords a rapid but unobstructed navigation to the Mississippi.

Another communication is stated to exist from the *Chicago River*, emptying into the south-western corner of Lake Michigan, to the *Illinois*. It is passed by boats of 50 tons, engaged in the fur trade, and is open nine months in the year.

535. Through the *Hudson River*, and the *Northern Canal*, passing to Lake Champlain, the Atlantic waters are united with Lake Ontario, and the lower portion of the St. Lawrence. The Grand Canal of New York will form a similar communication with the upper lakes.

Two routes have been proposed to connect the *Atlantic and western waters*, by means of the Grand Canal of New York. The most obvious is by a canal from Lake Erie to the branches of the Ohio, which is almost completed. The other route is by a canal from Lake Erie to Lake Michigan, and a second from Chicago River to the Illinois. The latter route is but little longer than the for mer; and the navigation would probably be less obstructed.

536. It is also proposed *to connect the Ohio with the Atlantic*,

by a canal from the head waters of the Monongahela to those of the Potomac, which will pass under the principal ridge of the Allegany, by a tunnel two miles in length. There is now a portage communication, by means of the Cumberland road.

The state of Virginia proposes another portage communication, from the head waters of the James to those of the Great Kanhawa; and a third has been proposed in Pennsylvania, from the western branch of the Susquehannah, to the Allegany River, and also to Lake Erie.

537. Great facilities also exist for the establishment of an *inland navigation along the coast* of the United States, from New-Hampshire to Georgia.

The *Middlesex Canal*, connects the Merrimac River above the falls, and the interior of New-Hampshire, with the harbor of *Boston*. From this harbor and Massachusetts Bay, a canal across the isthmus which unites Cape Cod to the main, would form a communication through *Narraganset Bay*, and Long Island Sound, to New York. The *Raritan* River is connected with the *Delaware* by a canal of 28 miles, with only an elevation of 30 feet to the summit level. The Delaware Bay is united to the *Chesapeake* by another, of 22 miles, between Christiana and Elk River.

All these canals pass through a flat country. It is somewhat doubtful whether the canal across the Isthmus of Cape Cod would not be liable to obstructions, by the accumulation of sand; and another route has been thought more likely to be useful, connecting Boston Harbor with Taunton River, which empties into Narraganset Bay, by a canal 26 miles in length, rising 133 feet.

538. After descending the Chesapeake Bay to *Norfolk*, on the Elizabeth River, there is a canal passing through the *Great Dismal Swamp*, which extends the navigation to *Albemarle Sound*. From this sound a range of low islands extends along the coast to Florida, which forms an inland passage nearly the whole distance. A part of this distance may be traversed by the canal which connects the *Santee* River with the harbor of Charleston.

539. *On the western declivity of North America*, the principal river is the COLUMBIA. It is from one to three miles wide in the lower part of its course. Vessels of 300 tons may ascend to the mouth of the Multnomah, 125 miles; and sloops, to the head of the tide waters, sixty miles farther. At the distance of 200 miles from the mouth, there are two rapids which require a short portage: but except these, the boat navigation is uninterrupted as far as the great falls, 260 miles from the sea.

ARCTIC REGIONS.

540. The ARCTIC REGIONS have not been fully explored; but appear to comprise a considerable extent of land, of which North Georgia, Greenland, and the island of Spitzbergen, are the principal portions known. Greenland and the neighboring regions have usually been considered as belonging to North America; but the channel of Barrow's Straits has been penetrated to 114° west longitude; the sea has been seen at two places, between this and Beering's Straits, by Hearne, Franklin, and Mackenzie; and it is probable there is no barrier but ice, to interrupt the passage across.

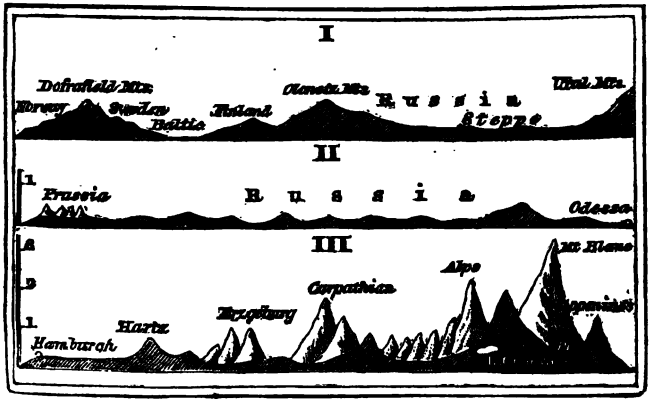
541. The *aspect* of these regions, is dreary and desolate in the extreme. The *coasts* alone appear to be habitable; and these present a surface of snow, varied with mountains of ice, during a greater part of the year. A scanty but beautiful vegetation appears, for a short period in the summer. The *interior* is traversed by naked, barren mountains, covered with perpetual ice, and interspersed with vast glaciers.

The *rivers* are neither numerous nor large. The waters and torrents of the summer, are chiefly converted into masses of ice during the winter; and the inhabitants and travellers depend on melted snow for their drink. These dreary regions are but thinly populated, either with men or animals.

ANTARCTIC REGIONS.

542. South of South America are the uninhabited islands of *South Georgia*, *Sandwich Land*, and the newly discovered *South Shetland Isles*, whose limits are not yet known. They are the only tracts of land known, near the Antarctic Circle. They present even a more barren, desolate appearance than the Arctic Regions; and are scarcely habitable on account of the cold

EUROPE.



(23.) *Physical Sections of Europe.*

I. *From the Atlantic to the Ural Mountains in lat.* 65°.

II. *From the Black Sea to the Baltic Sea.*

III. *From the North Sea to the Mediterranean.*

543. EUROPE is very irregular in its figure, and deeply indented with seas, bays and gulfs, which give a sea coast to every country except Switzerland, and the small states of Germany. They also divide it into small portions, which do not admit the extensive basins and majestic rivers, so common in America.

MOUNTAINS.

544. The surface of Europe presents *two principal highlands*—the Alpine highlands on the south, and the Scandinavian on the north.

The southern, or *Alpine highlands*, have their centre in the Alps of Switzerland, and send forth branches which traverse two thirds of Germany and France, and the whole of Spain, Italy, Austria, and Turkey. They pass through the north of Saxony to the Baltic, and through the north of Germany nearly to the North Sea, gradually descending to low ranges of hills. They extend through Poland and Russia by the Valdai Hills, which connect them with the northern highlands and the Ural mountains.

The principal mountains are the Alps, the Pyrenees, the Carpathian, and the Appenine Mountains.

545. The *Alps* are the most celebrated mountains in Europe

for their height and grandeur. This chain divides Italy on the north, from Germany, France, and Switzerland. It stretches in a crescent-like form, from the head of the Adriatic Sea, to the Gulf of Genoa, where it unites with a branch of the Appenines. Its *length* is about 600 miles, and its *breadth* in some places exceeds 100; the whole comprising various chains, or branches. The Alps are broken into lofty peaks, separated by narrow valleys and dreadful chasms, several thousand feet deep. Many of these rocky masses appear like mountains piled upon mountains, till their summits rise above the clouds, and viewed from above, resemble islands emerging from the bosom of the ocean. These mountains are chiefly from 4,000 to 12,000 feet high, and many are clad with perpetual snow. The most rugged part of this chain is that between Savoy and the Valais, in the midst of which *Mont Blanc*, the chief of the group, rears its head to the height of 15,660 feet, and may be seen at the distance of 140 miles.

From these elevations, numerous lakes and some of the principal rivers of Europe derive their origin. Impetuous torrents descend from their sides, the sources of which are often above the ordinary elevation of the clouds.

546. The lower parts of the mountains generally abound with woods and pastures, remarkable for their luxuriant verdure. The *middle regions*, to which the herdsmen and shepherds resort with their cattle and flocks during the summer, produce a great variety of odoriferous herbs, plants, and shrubs, and are enriched with excellent springs. The *upper division* is chiefly composed of rugged, and almost inaccessible rocks, often hidden beneath perpetual snow.

In *ascending the Alps*, the traveller experiences all the varieties of European climate, and every season of the year. A few paces conduct him from the flowers of summer to the undissolved snows of winter. The *elevated valleys* are filled with glaciers: and tremendous avalanches sometimes tumble from their cliffs.

547. The chain of *Mount Jura* is an important branch of the Alps, extending north-east from Geneva, and forming the boundary between Switzerland and France. It is thence continued under the name of *the Vosges*, and separates the streams and basins of France from those of Germany. This chain has an elevation of 4,000 or 5,000 feet, and is covered with snow the greater part of the year.

548. Next in celebrity are the *Pyrenees*, which separate France from Spain, and extend from the Mediterranean to the Bay of Biscay, or about 250 miles in *length*. Their *breadth*

varies from 50 to 100 miles. This chain does not attain the *height* of many of the Alpine summits. The highest peaks, however, which are situated near the middle of the chain, are about 11,000 feet above the level of the sea.

On the east of the Rhone, the *chain of Lozere*, and the *Cevennes*, (or Sevennes,) proceeds north, from near the eastern extremity of the Pyrenees to the sources of the Loire.

549. The *composition and aspect of the Pyrenees* is different from that of the Alps, as they not only contain calcareous matter, but large masses of sea-shells and other marine substances. The northern and eastern parts are the most smooth and fertile, while the south and west exhibit the sterile and rugged scenery that characterizes the higher Alps. There are more than 50 defiles or passes through these mountains; but only 5 are passable for carriages. Many of these are 7,000 feet above the level of the sea. The ascent on the side of Spain is steep and rugged; on the side of France, it is generally gradual and easy.

Neither of these chains is abundant in *mineral treasures*. These mountains, like the Alps, have their glaciers, and are subject to *avalanches*, which seldom fail to carry destruction in their progress.

550. The grand and extensive ridge of the *Carpathian Mountains*, extends in a semicircular form, from the southern point of Silesia, about 46° north latitude, and 23° east longitude, to the north and east of Hungary, sending off branches to Transylvania and Wallachia. The whole *length* of this chain is about 500 miles; but its *highest summits* do not exceed 8,000 or 9,000 feet, and few of them reach this elevation.

The *form* of these mountains is generally pyramidal, and most of their summits are covered with perpetual snow.* Their sides are clothed with extensive forests, particularly of pines and firs, enriched with a variety of mineral treasures.

551. The chain of *Mount Hœmus*, and the mountains of Turkey, have been too little explored by modern travellers to give us any correct materials for description.

552. The *Apennines* are that branch of the Alpine highlands which pass off from the Alps at Genoa, and traverse the whole of Italy from north to south. In the southern provinces, they divide themselves into two chains, one of which turns off to the Straits of Messina, and the other terminates at the Capo di Leuca. Many of these mountains are dormant or extinct vol-

* Edin. Gaz.

canoes, as is fully proved by the lava and volcanic rocks found upon their summits, even to the north of Rome. They are generally of less elevation than the Alps, and are frequently covered with trees to the very top. Some parts present, in a very striking manner, the naked, desolate appearance which belongs to volcanic regions.

553. These mountains *divide Italy* into two principal declivities, and give rise to most of its rivers. Various branches diverge from them, which give an undulatory appearance to the whole country. Different parts of the group have different names, chiefly local in their use.

There are several *smaller groups* of mountains which are considered subordinate to the Apennines. One lies on the north of the Tiber, another on the south, and another on the Adriatic. A fourth is composed of Vesuvius, Solfaterra, and the volcanic mountains and islands of the Bay of Naples.

554. The *mountains of Spain* generally traverse it from east to west, between the channels of the rivers; of which the principal are the chains of Biscay, Castile, Toledo, Morena, and Nevada. The two central chains are said to contain great quantities of granite; but they are generally secondary. Their *elevation* is not great. The serrated or saw-like appearance of their summits, has given them the name of Sierra. They are covered with snow only a few months in the year. Long ranges of moderate sized *hills* lie between them, which render the whole surface of Spain uneven and waving.

555. The *Scandinavian Highlands* take their name from the ancient peninsula of Scandinavia. They commence in Norway, and passing through Sweden, Lapland, and Finland, extend with some interruption to the Ural Mountains.

The *principal chain* is that of the Norwegian mountains, which separate Norway from Sweden. The middle portion of the chain is called Dofrafield, and this name has usually been applied to the whole. They commence about latitude 59°, and *extend* more than 1,000 miles from south to north, gradually diminishing in height as they approach the Northern Ocean. The *highest summits* are inferior in elevation to those of the Pyrenees, and perhaps to those of the Carpathian ridge; but they derive from their northern situation, all the horrors of perpetual winter. *Forests* of pine which flourish in the rigor of a cold climate, clothe their sides to a considerable height, furnishing inexhaustible stores of valuable timber for the more southern countries of Europe. The Norwegian Chain also yields marble, iron, copper, and other useful *minerals*.

556. These mountains send off several *branches* in Sweden

and Norway, and extend through Finland, under the name of the *Olonetz Mountains*. They have been little examined, but do not appear to attain a great height in any part. *From the chain of Olonetz*, a range of *highlands* extends south to Petersburgh, which seems to connect the chain with the southern or Alpine Highlands. The most considerable portion is the *Valdai Hills*, which give rise to the Volga; and these are only 1,200 feet above the level of the sea.

557. From 50° to 67° of north latitude, the *Ural Mountains* constitute the boundary between Europe and Asia, stretching through a space of more than 1,200 miles. This ridge, therefore, exceeds in *length* any of those already mentioned; but its *height* is not proportional, the loftiest summits being less than 5,000 feet. The people who live in its vicinity, style it *Semenoi Poias*—the girdle of the world. After the Ural mountains enter Asia, they separate into two *branches;* one of which extends towards the Altaian Chain, and the other to the Caucasian Isthmus. The northern part is imperfectly known; but is supposed to stretch nearly parallel to the River Oby, to the Frozen Ocean, and across the islands of Nova Zembla.

The loftiest summits are *composed* of granite, and are covered with perpetual snow. These mountains slope much more on the western than on the eastern side. They are generally *covered* with forests, often diversified with rich valleys, beautiful meadows, and fine transparent lakes. The central parts abound in valuable *minerals* and metallic ores. The *richest mines* are on the Asiatic side.

PHYSICAL DIVISIONS.

558. The *surface of Europe*, may be considered generally, as divided into three great portions; the northern and southern highlands, and the great lowland which lies between them.

The Scandinavian Highlands, including Norway, Sweden, Lapland, and Finland, as far as Petersburgh, are almost exclusively primitive; and have all the ruggedness which belongs to primitive regions. The secondary rocks appear only on the borders of the Cattegate, and some of the great lakes.

559. The character of the *Alpine Highlands* has been already described. They are surrounded by the transition and secondary formations, in Spain and Italy on the south, and France and Germany on the north.

A very extensive and regular *formation of secondary limestone*

extends from the Crimea, along the foot of the Carpathian and Bohemian Mountains, to Ratisbon; and thence along the Danube to the Rhine, the Rhone, and the Mediterranean. These regions have much of the roughness of a primitive country, with a greater degree of fertility, and rich deposits of mineral treasures.

560. To this succeeds a level tract on the north, forming the *great lowland of Europe*, which reaches to the shores of the Baltic and the North Sea, including Denmark, the Netherlands, the north of France, Germany, Prussia, and Poland, extending with few exceptions, through all the southern part of Russia, to the secondary and transition range which borders on the Black Sea. This tract is generally very level and fertile, and is traversed by numerous navigable streams.

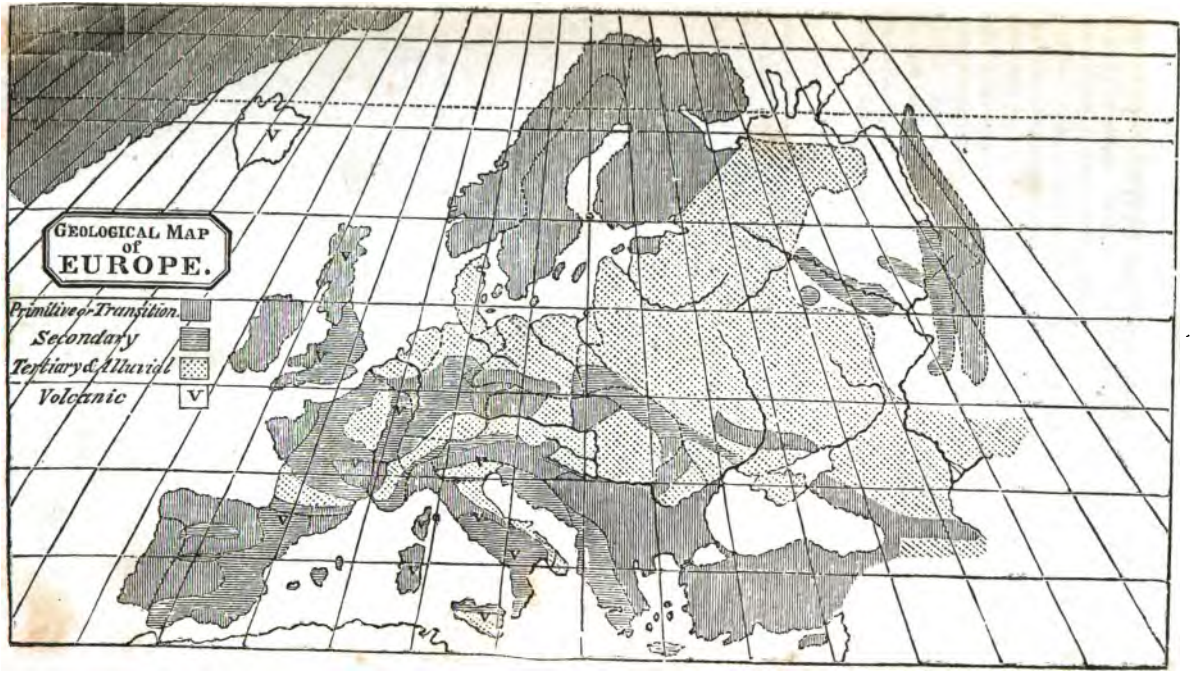
561. The *northern part of Germany* is one immense plain, descending gently towards the sea; and there are no considerable mountains within 150 miles of the shore. This lowland extends throughout the greater part of *Russia*, and forms extensive steppes. The northern part of Russia is allied to the lowlands in its character, and has one steppe which extends from the northern Dwina to the Petchora.

562. In *Denmark, the Netherlands*, and the portions of *Prussia, Poland and Russia*, bordering on the Baltic and North Seas, the land descends nearly to the level of the sea, and forms extensive marshes. Holland indeed, is to a great extent below the level of the waters, and is protected by banks from their inundations.

563. *By observing the course of the rivers*, it will be seen that Europe may be traversed from the south-west to the north-east, without crossing any considerable river. We thus discover an elevated ridge of land, which divides the streams flowing into the Atlantic and Baltic, from those which empty into the Mediterranean and Black Seas. It may be traced from the Ural Mountains by the Valdai Hills and the Carpathian Chain, to the Alps, the Cevennes, the Pyrenees, and the Atlantic Ocean.

Europe is thus divided into two *grand declivities;* the north-western and the south-eastern. These are subdivided into a number of smaller basins, corresponding to the seas which receive their waters.

564. The *Baltic and North Seas* form the receptacle for the numerous rivers of one division of the northern declivity, which extend in a circle around the shores of these seas, from the Scheldt and the Rhine, to the southern cape of Norway. It embraces the Netherlands, Denmark, Germany, Prussia, Poland, the eastern part of Russia and Sweden, and may be called the internal division of the northern declivity. The *external* divi-


GEOLOGICAL MAP
of
EUROPE.
Primitive & Transition.
Secondary
Tertiary & Alluvial
Volcanic
V

sion of the declivity embraces those portions whose waters empty into the Atlantic and Northern Ocean, including Northern Russia, Lapland, Norway, and the western parts of France.

565. *The southern declivity is divided* into three portions:—1. The extensive level in the south-east of Russia, which is drained by the Don and the Volga.—2 The basin of the Danube between the Carpathian Chain and the Chain of Mt. Hæmus, embracing the empire of Austria, and the southern kingdoms of Germany.—3. The three peninsulas of Turkey, Spain, and Italy. These peninsulas are traversed by chains of mountains, which give to each its peculiar system of highlands and declivities.

INLAND NAVIGATION.

566. Europe is so much penetrated by the arms of the sea, and traversed by so many rivers, that the *internal navigation* is extensive and easy. Few parts are destitute of a direct communication with the ocean; and its northern and southern seas have been connected in several places by canals of no great length, uniting the different streams of the central lowland.

567. The *Volga* is navigable from the Caspian Sea 2,000 miles to Rchef, 130 miles north-west of Moscow, and on the Oka branch to Vishnei Volotchock, midway between Moscow and Petersburgh; thence by the Tvertza and a canal, it communicates with Lake Ladoga, the Neva, and the Baltic Sea.

To avoid the dangerous navigation of Lake Ladoga, a canal has been cut along its margin, from the Volkof directly to the Neva. *By the Sheskna*, another of its branches, the Volga communicates through the canal of Mariev with Lake Onega, which empties into Ladoga by the River Svir.

It is proposed to connect Lake Onega with one of the rivers of the White Sea, and thus form a direct communication from the Northern Ocean to the interior of the continent.

568. The *Dnieper* is navigable on the principal stream as far as Smolensk, more than 800 miles, and is only once interrupted in this distance, by a train of rapids of 40 miles in length. These can be passed in boats only at high water. By the canal from the Prypec branch, it is connected with the Niemen. By the Beresina and the Beresinsky canal, it is united to the Dwina; and thus furnishes a water communication from Riga, on the Baltic, to Odessa, on the Black Sea.

569. The *Don*, toward its mouth, is divided into two streams, and excepting in a season of flood, is scarcely navigable. Its mouth is also obstructed with sand, so that only flat-bottomed vessels can pass.

One of its branches is connected with the Oka branch of the Volga. A canal

466608

directly from the Don to the Volga, where they approach nearest each other, has been proposed but never executed.

570. The *Rhine* is the great channel of commerce for interior Germany, and is navigable from Switzerland to the Sea. The current is generally rapid, flowing from four to five miles an hour. The chief descending trade commences at Basle. Few loaded boats ascend so high as this; but boats of 180 tons come to Strasburgh. Cologne is the chief seat of commerce on the Rhine, the goods being here transhipped in the large Rhine ships, built expressly for the river, often carrying 1,000 tons, but drawing only five or six feet of water.

571. *Holland* is so much intersected by the mouths of the Rhine, and numerous artificial canals, that inland navigation is extended through the very streets of their cities, and to the interior of their farms. The low and flat surface of the country has rendered many embankments and canals necessary, in order to drain off its waters.

The interior navigation is also continually extended by the large cavities left in cutting turf for fuel; which are often 10 or 12 feet below the surface of low water, and soon become lakes. Almost all travelling and transportation is on the canals, in boats drawn by horses, which are called *track-schuits*. Many of the canals admit of ship navigation; but the vessels chiefly in use are the Rhine ships.

572. *Belgium*, or the southern Netherlands, is also pervaded by numerous canals. The *Scheldt* is connected with Ostend on the coast, by a canal which passes from Ghent through Bruges to that port, and admits vessels from 300 to 500 tons. Branches proceed from this canal along the coast, to Dunkirk.

Other canals, which are navigable for small vessels, connect the Scheldt with Brussels and Louvain. The navigation of the Scheldt ceases at Valenciennes. From this place a canal passes to the River *Somme*, and another from the Somme to the Oise, a branch of the Seine, which forms a communication between the rivers of the Netherlands and *France*.

573. The slopes of the *French rivers* are well adapted to inland navigation, but very little is carried on. The *Seine*, from its mouth to Rouen, is obstructed by shifting beds of sand, and from Rouen to Paris, it is navigable only four months in the year. The great boats of Rouen carry 380 tons, and are drawn by 12 horses to Paris, in 18 or 20 days; but land carriage is often preferred to this tedious navigation.

574. The navigation *from the Scheldt to the Seine, is extended* by the canal of Orleans to the Loire. The *Canal of Burgundy* unites the Seine to the Saone, a branch of the Rhone; and the

Canal of the Centre, connects the Loire with the same river. A canal has also been commenced to connect the *Rhine* on, the borders of France, *with the Rhone*, and with the rivers which empty into the Atlantic. The *southern and eastern parts* of the kingdom are also connected by means of the Garonne and the Canal of the Languedoc, as already described, §424.

575. *Spain* is traversed by so many ridges of mountains, that it has few advantages for inland navigation. Several canals have been proposed, and two were commenced long since; but none are yet completed.

576. The *Danube* affords a navigation of about 1,500 miles. Below Belgrade, it is obstructed by cataracts; but has a free navigation above, as far as Ulm. Its upper branches are too rapid for navigation; but the lower *branches*, the Inn, the Save, the Drave and the Teysse, or Theiss are navigable for some distance. Several canals have been dug to extend its inland navigation, and scarcely any part of the basin of this noble stream is far distant from navigable waters.

577. The great plain which forms the *North of Germany, Prussia and Poland*, is traversed by several large rivers and their branches, which give almost every portion of the country the advantages of inland navigation. In the northern parts there are numerous *lakes*, which might easily be connected.

578. The *Ems and the Weser* are both navigable—the latter for 100 miles to the Hartz Mountains. The *Elbe* is navigable from the frontiers of Bohemia; and from a little distance above Dresden, to Hamburgh, it is unobstructed. It is connected by means of the Havel and the Spree, with a canal to the Oder. A small canal of ancient date also passes from the Elbe to the free city of Lubeck.

579. The *Oder* is navigable above Breslau, about 300 miles; but its mouth is somewhat obstructed. The Wartha, one of its branches, is navigable 200 miles into Poland; and from this stream a canal passes to the Vistula.

580. The *Vistula* is navigable from Austrian Gallicia to the Baltic at Dantzic, nearly 400 miles; and its branches, the *Bog* and *Narau*, about 100 miles each. Their streams convey the produce of Poland to Dantzic, in barges of from 30 to 60 tons.

The delta of the Vistula for some distance, is an embanked country, intersected by many navigable canals. The great body of the river falls into the Frische Haff, by which the navigation is continued to Konigsburgh, on the *River Pregel* which is navigable 30 miles farther. The Vistula is connected through the Bog, and a canal to the Dneister; and by another canal to the Dneiper. The Niemen is also connected with the Dneiper.

581. *A series of canals between the Elbe, the Oder, the Vistu-*

la, and the Niemen, form an inland navigation from Hamburgh and the North Sea through Prussia to the frontiers of Russia, a distance of 800 miles. It is chiefly through these rivers, with a few canals of no great length or elevation. The course is nearly parallel to the shores of the Baltic Sea, at the distance of 100 miles.

582. *Italy* has been, from ancient times, traversed by navigable canals, most of which have been constructed in the northern part. The basin of the Po is traversed by numerous canals, designed to connect its branches and irrigate the country. They have been rendered the more necessary by the rapidity of this stream and its branches, and the great height to which they are often raised, by the melting of the snows on the Alps.

Bologna is connected with *Ferrara* by a canal 24 miles in length; and from Ferrara, there is an inland navigation to *Venice*, by means of canals and the River Po. The canal which connects *Leghorn* with the river Arno, and the city of *Florence* is the most considerable in Tuscany. Its waters flow from the Arno; but the descent is so gradual, that boats are drawn up with ease.

583. The coasts of *Sweden, Norway, and Finland*, are bordered by innumerable islands and bays. The whole interior of Sweden is interspersed with lakes of various sizes. They are fed, connected, and discharged by large rivers, which are generally interrupted by rapids, often dangerous. The necessity of inland navigation has led the hardy people of the north to a boldness in passing over cataracts of some height, which is almost beyond credibility. The rivers of Norway are still of little use in commerce, except in floating down trees from the mountains to the sea.

584. The *River Gotha*, in Sweden, by which Lake Wenner is discharged into the Baltic, is interrupted by the cataracts of Trolhetta, which have been avoided by a canal. Another canal is commenced from *Lake Wenner to the Baltic*, which will complete the navigation from Gottenburgh and the Cattegate, across Sweden to the Gulf of Bothnia, and render the trade of Sweden independent of Denmark.

The *Lake Maler* is connected with the neighboring Lake Hielmar, by a canal. Another canal connects it with the province of Dalerne, at the head of the Dahl, and affords conveyance for large quantities of iron to the capital.

585. In *Denmark*, the River Eyder, which flows into the North Sea, is connected by the canal of Kiel with the Baltic. The passage admits vessels of 120 tons, and 2,000 or 3,000 ships have passed in a year. But the Eyder is much obstructed with shifting sands; and many still prefer the longer route through the sound, or Cattegate.

586. *Great Britain* is distinguished for the extent of its inland navigation. The canals are too numerous for minute description.

It is sufficient to say, that no portion of England south of the river Tees, is 15 miles from navigation; and that no country enjoys greater facilities for the transportation of fuel, provisions, and other articles of necessity, to the doors of the inhabitants.

587. The *Thames* is navigable to London, 60 miles from the sea, for ships of the greatest burden From this river there is a direct navigation, by means of canals, to the River Severn, and to several streams which empty on the southern coast of England. By means of these, and the Grand Junction and Grand Trunk Canals, an easy inland navigation is formed from all the principal seaports, and almost every county of the kingdom, to London, the great emporium of its commerce.

The Grand Trunk forms a communication from the Mersey to the Trent, and from the Trent to the Severn; and the Ellesmere Canal forms a direct channel from the Severn to the Dee and the Mersey. The northern branches of the Humber and Trent are also connected with Manchester and Liverpool by three canals, which cross the great central ridge of England.

588. The mountainous surface of *Scotland* admits of none but short, rapid, and obstructed navigation, by means of rivers. It also renders the construction of canals generally difficult.

589. The principal canal is the *Caledonian*, which connects the Murray Frith with the Atlantic Ocean. It is navigable for frigates of 32 guns, and a very dangerous navigation round the northern coast of Scotland may thus be avoided.

The *Forth and Clyde Canal* unites these two rivers, and intersects the island from east to west. A branch extends from it, through Glasgow, 54 miles, to Edinburgh.

The *Canal of Crinan* is cut across the peninsula which separates the Frith of Clyde from the ocean, and thus forms an inland navigation from the Irish Sea to the Caledonian Canal, and the northern part of Scotland.

590. *Ireland* enjoys an inland navigation of considerable extent and importance. The *Shannon* is the largest river in Ireland, and is navigable 50 miles to Limerick, for ships of 300 tons. It expands into a variety of wide lakes, and is obstructed by rapids; but it passes through a fertile country, and has been rendered navigable by artificial means through the greater part of its course. By means of the *Grand Canal* and the *Canal Royal*, there are two communications, at no great distance from each other, from this river and the western coast, to Dublin.

591. The *Barrow* is the second River in Ireland, and is navigable 43 miles. It is united with the Grand Canal, and thus forms a communication from the southern coast of Ireland to Dublin. The *River Ban* which passes through Lough Neagh, is connected by a canal with the harbor of Belfast on the east,

and Newry River on the south, forming an inland navigation from the northern to the eastern coast.

592. *From a review of these statements* in connection with the map, it will be seen that Europe enjoys peculiar facilities for inland navigation.

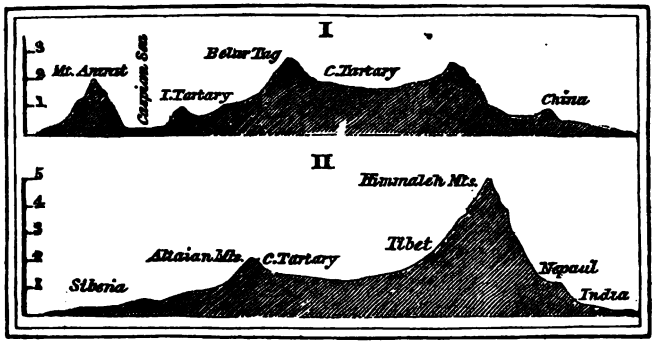
By the Volga and its canals, there is a direct communication from the Caspian Sea, to the Gulf of Finland, and the north of Russia; and a canal may be easily extended to the White Sea.

From the Black Sea, the Volga and its canals may be entered by means of the Canal from the Don, and navigation carried on from the Mediterranean to the Baltic and Caspian Seas. The Dnieper and Dniester also, by their connection with the Dwina, the Niemen and the Vistula, afford a direct passage from the Archipelago, and Black Sea, to the Baltic; or by means of the canals of Prussia, an inland communication to the North Sea.

593. By the canal of Languedoc, and the chain of canals through the Rhone, the Loire, the Seine, and the Scheldt, a direct communication is established from the Mediterranean, to the Bay of Biscay, the English Channel, and the North Sea.

594. By the canals of England, Scotland, and Ireland, inland navigation is opened from the Atlantic on the west of Ireland, to the Irish Sea, and thence to the North Sea. From this sea, the canal of Kiel opens a direct passage to the Baltic; and by the canal of Gottenburgh, to Stockholm, and the Gulf of Bothnia.

ASIA.



(24.) *Physical Sections of Asia.*

I. *From the Black Sea, east, to the Pacific Ocean.*

II. *From the Northern Ocean, south, to the Indian Ocean.*

595. The *most striking feature* in the surface of *Asia*, is the table-land in the centre, on which Chinese Tartary and Tibet are

situated. It forms the most elevated portion of the eastern continent, supported by immense ramparts of mountains; the Altaian on the north; the Belur Tag on the west; and the Himmaleh on the south. From this lofty region the principal ridges of mountains branch out; and here the largest rivers of Asia have their sources.

MOUNTAINS.

596. *The principal chain of Asia* is the Altaian. South of the great Lake of Baikal, it is supposed, are the highest points of this chain, which rise more than ten thousand feet above the sea, and are covered with perpetual snow. Most parts of it are much lower. After bending to the north, they are known as the Mountains of Daouria, which are succeeded by those of Yablonoy and Stannovoy, and terminate in a portion termed the Mountains of Okotsk.

597. These mountains give rise to a number of large and important rivers, which traverse Siberia and empty into the Arctic Ocean. Little is known beyond the outlines and general direction of this range. Several lower ridges branch out from it, and diversify the neighboring districts. *Its general character* appears to be primitive; and some parts abound in mines, which afford important articles of commerce, and yield a considerable revenue to the Russian Empire.

598. *A principal branch* of the Altaian, are the Bogdo Mountains, which pass through Chinese Tartary, on the south, in a chain nearly parallel. They are sometimes called the Great Altay, and the chain on the north, the Little Altay. A low chain of mountains, north of the Sea of Aral, connects the Mountains of Ural with the Altaian.

From the eastern extremity of the Altaian, another chain branches off towards the south, which passes along the western borders of China, and sends off various branches which traverse Farther India.

599. The mountains of *Himmaleh*, or Himlaya, separate Hindoostan from Tibet. They extend from 35° to 25° north latitude, in a south-easterly direction, from Persia towards the southern borders of China; and are considered the loftiest chain on the globe. Several of the summits have been estimated at 25,000 or 26,000 feet above the level of the sea.

The long range of pinnacles covered with eternal snow, seen from the burning plains below, has always been an object of wonder and religious veneration to the Hindoo. Various divisions of these mountains receive different

names in different places; such as Himadri, Himavut, &c. All these names have an allusion to their appearance: *him* being an ancient word, signifying snow.

600. The *declivity* of these mountains is rapid towards the equator, and is exposed to the full influence of a tropical sun. On the north they have a less rapid descent, and terminate in the high table-land of Tibet. The *highest points* of the Himmaleh, are east of the River Indus, which pierces this chain. East of Nepaul, it penetrates into an unexplored region, declining in altitude as it proceeds, and is supposed to terminate on the shores of the Bay of Bengal.

From almost every part of the immense store-house of snow on these mountains, copious streams descend to the plains, and unite into noble rivers, which water and fertilize the plains of Hindoostan. The Indus, the Ganges, and the Burrampooter are among the most distinguished rivers on the globe.

The passes through these mountains are exceedingly difficult and dangerous. Their sides, in some places, are covered with pines of an enormous size. Villages are found in the regions near this chain, which are covered with snow half the year. Some of the valleys have considerable vegetation.

601. West of the Indus, the Himmaleh mountains are denominated *Hindo Coosh*, or Indian Caucasus, and still further west, *Paropamisus*. The Paropamisan range forms the northern boundary of Cabul, and is sometimes called the Mountains of Gaur.

The chain of the *Belur Tag*, or cloudy mountains, the Imaus of the ancients, branches off from the Himmaleh, west of the Indus, and turning north, connects this chain with the Altaian. It is the western rampart of the immense table-land of Central Asia, and forms the barrier between the independent tribes of Tartary and the Chinese Empire.

The *Mus Tag*, or Mooz Tag, lies west of the Belur Tag, called also the Kara Koroom Mountains. The eastern ridges of these mountains are covered with forests, while those further west, present a naked and desolate aspect. The Oxus or Jihon, the Sir, and the Kizil, rivers flowing into the Sea of Aral, have their sources near the Belur Tag.

602. The celebrated *Mountains of Caucasus*, stretch from the Black Sea to the Caspian, filling up the isthmus with their branches. The grand ridge runs like a wall from sea to sea, and admits of few passages from Europe to Asia. These mountains combine the most desolate peaks with the most fertile vales—regions of perpetual snow, with valleys where the heat is quite oppressive.

From the Steppe of Kuma, one of the most extensive plains

in the old world, the Caucasus is seen in all its grandeur; and apparently forming two separate chains, rising above each other. The highest is continually covered with snow, and its peaks are said to be little inferior to Mount Blanc in height. The northern ridge is less elevated, and is called by the natives, the Black Mountains.

603. The *Mountains of Taurus*, rise abruptly near the shore of Anatolia, east of Rhodes. They extend towards the Caucasus, in a long declivity or table-land, and terminate in Armenia, with a precipitous descent. They are lofty and rugged, and in many places are covered with pine forests. They are traversed in summer by the Turcoman shepherds, who descend, and take up their residence in towns during the winter. Branches of this chain extend over a great portion of Asia Minor; and detached mountains rise in various parts. They give rise to some celebrated rivers, of which the Euphrates and Tigris are the largest.

604. *Mount Lebanon* or *Libanus* is a small branch of the Taurus, which passes to the south through Syria, along the coast of the Mediterranean. In some instances, the mountains run so near the sea as to leave but a narrow pass. The highest points of the ridge are between 30 and 40 miles from the shore. Its summits are frequently covered with snow. *Antilibanus* is a detached chain of inferior altitude, east of the former.

The mountains of Lebanon were celebrated in ancient times for their excellent cedars, and are still covered, in many places, with the descendants of those noble trees. They are chiefly composed of limestone, and present those castellated rocks and extensive caves, which are characteristic of that formation.

605. One of the principal branches of the Taurus, is the *Mount Zagro* of antiquity. It stretches from north to south, between the Caspian Sea and the Tigris, and divides the Turkish and Persian Empires. This range runs nearly parallel to the River Tigris and the Persian Gulf, and sinks into a mere ridge of hills in the vicinity of Gombroon. Small branches either of the Taurus or Caucasus, extend through the western and southern region of Persia; but few of the ranges are of extraordinary elevation, although the summits of some of them are perpetually covered with snow.

606. The celebrated *Mount Ararat* is in the north-western part of Persia, near the Caucasus, and connected with it. It presents two insulated summits, the highest of which is covered with perpetual snow. The lower parts are chiefly composed of a deep, moving sand. One side presents a vast chasm, tinged with smoke, from which flame has been seen to issue.

607. Near the coast of the Ægean Sea, or Archipelago, the celebrated chain of *Ida* ascends abruptly from the plain. Its summit was called Gargarus by the ancients. It gives rise to the Granicus, the Simois, and other streams of antiquity. About 140 miles west of Ida, the *Asiatic Olympus* rears its summit to a still greater height, and is covered with snow, most of the year. It is now called Keshick Dag.

608. On the south-west coast of Hindoostan, a chain of mountains called *The Gauts* rises near the 20th degree of north latitude, and runs almost parallel to the shore, at a short distance, till it terminates in Cape Comorin. Another range diverges from this, towards the north-east; and sweeping round the south of Mysore, and the east of Balagaut, ascends to about the 17th degree of north latitude, forming what is usually denominated the table-land of the Gauts.

609. The island of *Ceylon* contains many mountains, some covered with verdure, and others composed of naked rocks. About 80 miles east of Columbo, is a remarkable mountain, called Adam's Peak, which rises about 9,000 feet above the level of the sea.

Borneo, Sumatra, and the remaining *islands south-east of Asia*, like most other islands, have a mountainous region in the centre, descending to flat and level tracts on the shores, which are often marshy. Volcanoes are found in many of them. Streams are usually numerous. *Sumatra and Java* are traversed by mountains through their whole length, which are so elevated as to produce a temperate climate in the interior. Mount Ophir, in Sumatra, is 13,000 feet high.

PHYSICAL DIVISIONS.

610. *The great table-land of Asia*, which is occupied by Chinese Tartary, descends towards the centre, and has its own system of mountains, and valleys and streams. It is supposed to be in general, about 9,000 feet above the level of the sea, and the extreme dryness and cold of its climate, renders it unfavorable both to animal and vegetable life. The extensive desert, or chain of deserts, called Cobi or Shamo, occupies a large part of it. The principal *declivities* of Asia descend from this central table-land, toward the north, east, south, and south-west.

611. The *northern declivity* which forms Asiatic Russia, is a sterile, alluvial region. It commences at the base of the Altaian and Caucasian chains, descending with few irregularities of surface towards the Arctic Ocean, and stretching from the rocky shores of the Pacific on the east, to the Ural Mountains on the west

It is chiefly composed of vast steppes, or plains, some fertile, some desert, and others marshy. The *most extensive* is that which stretches from the river Don to the Irtish, already described. A succession of others extend from the Irtish beyond the Yenesei. The *Steppe of Barabintzi*, between the Oby and the Yenesei, is chiefly marshy. In the northern part it forms a plain of mud, frozen through the greater part of the year; and produces only moss, and a few drooping plants.

This declivity is traversed by numerous rivers, many of whose vales are fertile; and some parts of the southern and western regions produce grain and grass; but its geological character, and its inhospitable climate, must render it in general, a region of perpetual sterility.

612. The *eastern declivity*, embracing China and the eastern part of Chinese Tartary, has been little examined. It is traversed by several large rivers. China is so fruitful as to support a vast population. A portion of Eastern Tartary partakes of the sterile character of the central table-land; but a part of it is productive.

613. The *southern declivity* of Asia, is occupied by the plains of Hindoostan and Farther India. Many parts of this region are alluvial; and almost all extremely fertile. They are watered by numerous streams; and the luxuriant vegetation of a warm and moist climate, gives them the title of the garden of the world.

614. The *south-western declivity*, embracing Arabia, and part of Persia, abounds in sterile deserts of alluvial sand. Independent Tartary, and the northern parts of Turkey and Persia, contain some fertile districts. The shores of the Mediterranean Sea, are among the most delightful portions of Asia.

INLAND NAVIGATION.

615. The *northern declivity* of Asia is furnished with numerous large rivers, which afford an easy navigation during the short season of warmth. The sterile nature of the country, and the small number of inhabitants, render them useful only in transporting the furs and minerals of this dreary region, and the commodities of China, to Russia. Two portages, from the Amour to the Selinga branch of the Yenesei, and from the Tobol to the Volga, are the only interruptions to the inland navigation, from the mouth of the Amour, through the Yenesei and Oby, to the Baltic Sea.

616. *China* is traversed by two very large rivers, flowing from west to east. Their branches are also large, and extend to most provinces of the empire. The navigation of the Kiang Ku is very good. That of the Hoang Ho is more obstructed.

Canals have been formed connecting their streams; and a very extensive inland navigation is thus opened, from north to south and from east to west, connecting the capital with most of the principal cities and towns. This provision, in an empire which has so great a variety of soil and climate, supplies, in a great measure, the want of foreign commerce.

The Chinese historians give a minute account of the formation and management of the canals during a course of 1800 years. The principal line of canal navigation, is that from Pekin to Canton, 920 miles in length. The first division, 500 miles in length, from Pekin to the Yellow River, is called the Imperial Canal, because it is navigated by the imperial barges. From this place, the navigation is chiefly by the river and a branch which enters it from the south, to a chain of mountains which divide it from the province of Canton. Here there is a portage, or carrying place of 30 miles, to a stream which leads to Canton. Numerous branches extend from this canal to smaller streams and to neighboring cities; and thus form a water communication from the capital, to almost all parts of the empire. The construction of the Chinese canals is very imperfect, and the navigation is tedious and difficult. The voyage from Pekin to Canton occupies three months.

617. *Hindoostan and Chin-India* are furnished with an extensive inland navigation. The rivers of Chin-India are little known; but the streams of their deltas, and numerous connecting branches, provide employment for vast numbers of boats.

618. In Hindoostan, the *Indus and its branches* afford a free navigation for vessels of 200 tons, to Moultan and Lahore, about 850 miles. The current runs about one mile an hour, and boats descend in 12 days. The eastern branches of this river, were early connected with the Ganges, by canals which were intended chiefly for watering the country during the dry season. One of these is 114, and another 73 miles in length; and they furnish inland navigation to a great extent of country.

619. The *Ganges* is navigable 1350 miles from its passage through the lower ranges of the Himmaleh Mountains to the sea. At the distance of 800 miles from the sea, in the lowest state of the river, it is 30 feet deep; and continues of this depth to its mouth, with a current of three or four miles an hour. Boats descend from 40 to 70 miles a day, according to the season; and ascend from 17 to 20 miles a day. By means of this river and its branches, every part of Eastern Hindoostan is brought within 25 miles of navigable water. 30,000 boatmen are employed upon them, in transporting articles of commerce.

620. The Kistnah, Godavery, and other rivers, supply a sufficient internal navigation to the *South of India*. For 600 miles from the Kistnah to Cape Comorin, there is no port for shipping; the coast forms a straight line, and the access to the shores is dangerous, except for boats of a peculiar construction.

621. The *eastern coast* is almost destitute of rivers, as far as

the Gulf of Cambay, where the Nerbuddah empties. Its branches approach those of the Ganges.

622. The *western part of Persia*, being chiefly mountainous, has no navigation except through the branches of the Euphrates and Tigris. These rivers rise near each other, and unite and empty into the same channel. They were formerly connected by canals, some of which were made for irrigation; but they are now neglected, and chiefly destroyed. Turkey, the northern parts of Persia, and the countries intervening between them and Russia, are well supplied with means of navigation by the inland seas which surround them. The Caspian Sea has scarcely any good harbors. Its shores are flat, and it is subject to dangerous storms.

623. The arid plains in the *south of Persia, and in East Persia and Arabia*, are traversed by torrents in the wet season; but their beds are dry in the summer. They admit of no commerce, but by means of the patient, hardy camel.

AFRICA.

624. Africa is destitute of the inland seas of Europe, and the great navigable rivers of Asia and America. Communication between its countries is thus rendered difficult. Immense deserts, or oceans of burning sand, form its most striking feature. They cover most of the surface of northern Africa, and probably extend south of the equator also, defying every effort of human skill and industry, and forming a barrier to the intercourse of nations, more difficult to pass than the ocean. The obstacles which the nature of the country and the barbarism of the people have placed in the way of the traveller, have kept us in such ignorance of its geography, that there are no materials for an accurate description of the interior.

MOUNTAINS.

625. *The chains of mountains in Africa* are not inferior in elevation to those of Europe, and surpass them in length.

The chain of *Mount Atlas* on the north, extends more than half across the continent. It stretches through the greater part of Barbary; and divides it from the vast Desert of Sahara.

The mountains which form the eastern boundary of Morocco are by far the loftiest part of this chain. Their height is more than 13,000 feet; and their summits, even in this tropical region, are covered with perpetual snow.

626. As the chain alters its direction, and stretches through Eastern Barbary, it diminishes considerably in height, and spreads into various *branches*, of which Mount Jurjura in Al-

giers, is the most elevated. Lempriere, who traversed a part of these mountains, represents them as *composed* in a great measure of rugged and barren rocks, whose perpendicular and immense height filled the mind with horror. These cliffs are intersected by deep valleys, filled with villages and gardens; and even in December, covered with the most beautiful verdure. Between this chain and the sea, is interposed a valley of from 50 to 200 miles in breadth, which embraces the cultivated lands of Barbary. Another ridge, denominated Little Atlas, passes through them in the same direction with the greater Atlas, from the Straits of Gibraltar to Cape Bona, in Algiers. Some elevated chains are also found east of the Atlas, on the shores of the Mediterranean.

Neither of these chains is famed for its *mineral treasures;* but this may arise rather from the neglect of the inhabitants in exploring them, than from any real deficiency, particularly as silver, copper, lead, and iron, have been found in small quantities. The Atlas pours down innumerable *streams;* but from its peculiar situation, they are either received into the ocean, or lost in the sands of the desert, after a very short course.

627. The *central mountains of Africa* must be of still greater height than the Atlas, if we may judge by their fame throughout the continent, and the large rivers to which they give rise. The loftiest portion appears to be that lying to the south of Abyssinia, known to the ancients under the poetical appellation of the *Mountains of the Moon*, and called by the natives Jibbel Kumri. These certainly contain the remotest source of the Egyptian Nile, as well as of other great rivers of which we know little.

On the other side of the continent, and nearly under the same parallel, we find the *Mountains of Kong*, which stretch without interruption from the coast to the meridian of Tombuctoo. It has been supposed that these mountains run eastward, till they reached the Mountains of the Moon, and form an uninterrupted chain across the whole breadth of Africa; but this is rendered doubtful by the remarks of recent travellers.

628. The *composition and structure* of these mountains is almost entirely unknown. Gold is washed down by numerous streams which descend from them: and there are large copper mines to the south of Darfur.

The Nile derives a considerable portion of its streams from the Mountains of the Moon. The Mountains of *Kong* give rise to the Gambia, the Senegal, the Niger, and some other rivers of importance.

629. *Along the coast of the Red Sea,* is a chain of mountains

which seems to connect the northern and central chains of Africa. At the point of their union is *Abyssinia;* which may be denominated the Switzerland of Africa. The whole country inclines to the north-west, and is guarded towards the east and south by vast mountain barriers. The long eastern range, called Lamalmon, which bars the entrance from the Red Sea, is elevated and rugged, and forms a continuous ridge. The whole range of mountains extends north and south for 80 miles. The mountains of Gorjan give rise to the Bahr-el-Azrek, or Abyssinian Nile.

630. Many of these mountains are very singular in their *appearance*, resembling the ruins of ancient walls, towers, and cities; and in some places are so steep as to be ascended by ropes and ladders. Sometimes a circuit of rocky walls supports a plain of considerable extent, covered with trees and verdure. The actual height of the Abyssinian mountains has not been determined; but it is evident that they approach the limit of perpetual snow, which, in the tenth degree of latitude, is about 15,000 feet. Numerous torrents occasionally roll down from these chains; and springs issue from their sides, which unite and form several large rivers.

In the mountains of Abyssinia, granite and slate have been very extensively observed; and it is probable that these primitive rocks occupy a great portion of the principal chains. They seem remarkably destitute of metals. The declivities of the mountains afford the most agreeable situations, and here the towns and villages are usually built. The deep valleys are unhealthy.

631. *The Mountains of Lupata* are supposed to follow the direction of the eastern shore of Africa, between 10° and 20° of south latitude. The existence of this chain is not fully ascertained; but is rendered almost certain, by the number and size of the rivers on the coast.

632. *In South Africa*, three successive ranges of mountains run nearly parallel to the southern coast, and divide the greater part of the colony into three terraces. The first of these chains is called Lange Kloff, or Long Pass, and encloses a space between it and the ocean, varying from 20 to 60 miles in breadth.

Within this range is another, nearly parallel to it, called Zwarte Bergen, or Black Mountain. It rises still higher, and is more rugged than the former, and is in some places composed of double and triple ranges. From 80 to 100 miles north of the second range are the Nieuweldts, or Snowy Mountains, the highest chain in southern Africa. Its most elevated summits being generally covered with snow, are supposed to be 10,000 feet in height.

633. Besides the principal ranges of mountains in South Africa already mentioned, others run nearly *parallel to the coast of the Atlantic*. The most noted hills are near the southern extremity of the continent. Behind Cape Town is Table Mountain, a stupendous mass of naked rocks, the north front of which faces the town, and runs nearly on a horizontal line, about two miles in length. Its face rises almost perpendicularly, and appears like the ruined wall of some gigantic fortress. Its height above Table Bay is about 3,500 feet.

634. The island of *Madagascar* is intersected throughout the whole length, by a lofty ridge of mountains. The highest points of this chain appear to be towards the extremities, and are said to be more than 10,000 feet in height. The scenery in many places is strikingly grand. Awful precipices are crowned with forests—hills and valleys are adorned with all the beauties of nature—and extended plains are grazed by numerous herds of cattle.

Minerals abound in these mountains; but they are turned to little advantage by the present inhabitants.

PHYSICAL DIVISIONS.

635. From this account of Africa, it will be seen that *its coasts are bordered* on all sides by ranges of mountains. They descend toward the sea, by the short *declivities* of Barbary, Senegambia, Guinea, Lower Guinea, and Zanguebar. These are generally well watered and fertile regions.

636. On passing these exterior ridges in the north of Africa, we meet with those barren tracts of sand which form the *deserts*. The tract which lies between the Atlas and the Mountains of the Moon, is chiefly occupied by the burning Sahara, a region of sand and sandstone, which is said to be little elevated above the sea. This desolate expanse is watered by no streams; and only here and there is found a well, or a fertile spot.

637. South of this lies the *vale of the Niger*, which has all the fertility of a well-watered, tropical region, and furnishes support to a large population. On the east, is the narrow *vale of the Nile*, long celebrated for its fertility. The sands of the desert have now buried many fair portions of ancient Egypt, and greatly reduced the extent of its cultivated lands. The mountainous region of Abyssinia is the source of its waters.

638. That portion of *Central Africa* which lies between the Jibbel Kumri and South Africa, has never been explored by travellers; and we know not even the names of its countries.

639. Between the mountains of *South Africa*, is a succession of terraces, rising and diminishing in fertility as they recede from

the sea. The belt enclosed between the two first mentioned chains, (¶ 632) contains many fertile tracts, occupied by Dutch farmers. The second terrace contains a large portion of arid soil, and is called the Karoo. The third elevation is a large plain, about 300 miles long, and 100 broad, called the Great Karoo. It is a complete scene of desolation, and does not contain a single fixed habitation.

An extensive plateau or table-land, has recently been discovered in South Africa, north of the Tropic of Capricorn.

INLAND NAVIGATION.

640. Vast regions in Africa, like others in Asia, are so *destitute of rivers*, that their commerce is carried on entirely by means of the camel, termed "the ship of the desert." The *western coast* has considerable inland navigation, by means of the Senegal, the Gambia, and other large rivers emptying into the Atlantic. The Niger also appears to be the channel of a considerable inland commerce, which is now known to extend from its mouth, in the Gulf of Guinea, to all the kingdoms of Soudan.

641. The *Nile* is the most remarkable among the rivers of Africa for its inland navigation; and Egypt is the only country where canals appear to have been formed for that purpose. It is now accessible only by two mouths—those of Rosetta and Damietta. The whole coast of its delta is lined with a succession of shallow lakes, which communicate with the sea, and are connected with the principal channel by canals. During high water, vessels of 40 tons navigate the stream without difficulty; but in the dry season, only boats can pass. The boat navigation extends to the cataracts, 600 miles from the mouth.

642. The celebrated *Canal of Alexandria* passes to this city, from the Rosetta branch of the Nile, along the neck of land between Lakes Mareotis and Aboukir. It furnishes the inhabitants with water during the flood of the Nile, which is preserved in cisterns for the rest of the year. The water is not sufficiently high for navigation more than 20 or 25 days in the year.

A canal was formerly cut from the Nile to the *Red Sea*, at Suez; but it has been entirely closed or disused of late years

MARITIME WORLD, OR OCEANICA.

643. The numerous islands which form the Maritime World, are extremely various in their character and magnitude. New Hollond is by far the largest, and almost claims the name of a continent. Those of Polynesia are generally very small.

644. Some of these islands have the lofty, rugged appearance of primary rocks; others are volcanic; and many of the low islands appear to be founded on coral. They are generally too small to require minute description in a system of geography, or too little explored to admit of it.

AUSTRALIA.

645. New-Holland has scarcely been explored beyond the colony of New South Wales. The whole coast has a barren, repulsive appearance In the colony, the land immediately bordering on the sea is flat and barren; but a few miles in the interior it is fine, and abounds in prairies almost destitute of timber. The Blue Mountains run along the coast, and separate the colony from the interior. They give rise to several large rivers, some of which flow into the interior, and are lost in extensive morasses; and it is singular that no large streams have been found emptying on the coast. From these circumstances it has been conjectured, that the whole island forms but a single basin, descending towards the centre, into extensive morasses or lakes.

646. Van Diemen's Land has a more favorable appearance on the coast than New-Holland, and is remarkable for the number of fine harbors. It is on the whole mountainous. It abounds in streams; and there are many large lakes among the mountains. The land is often good on the coasts; and in the interior almost uniformly. Sometimes it spreads into extensive prairies, and every where presents great advantages for settlement and cultivation.

647. New-Guinea, and the neighboring islands north of New-Holland, are large, but have never been examined sufficiently to ascertain even the outline of their coasts.

New-Zealand comprises two islands. The surface is waving, gradually rising into mountains towards the centre. Mount Egmont, 12,000 feet high, is the loftiest peak. The northern island has a fertile soil; the southern is less productive.

New-Caledonia is an island of considerable size, surrounded by dangerous rocks and shoals. It presents a uniform, mountainous chain, with barren summits, interspersed with fertile valleys.

The New-Hebrides are a group of small, rocky islands, which are yet fertile and populous.

POLYNESIA.

Islands North of the Equator.

648. The *Pelew Islands*, the *Ladrones* and the *Carolines* are groups of small islands, only remarkable for their fertility and fine climate.

The SANDWICH ISLANDS are a group of 9 or 10 islands. The whole are estimated to contain 6,000 square miles, of which Owhyhee, or Hawaii, contains 400. This island rises in the centre into the peaks of Mouna Kaah and Mouna Roah, which are estimated to be 16,000 feet above the level of the sea. The surface is generally waving, and the soil very fertile.

Islands South of the Equator.

649. The FRIENDLY ISLANDS are a numerous group, consisting of more than 150 islands, the greater part of which are either rocks, or shoals, or barren desert spots. Some are fertile and delightful. The largest is Tongataboo, a low, fertile island, which is said to be based on coral.

Otaheite is the principal of the SOCIETY ISLANDS. It has a fertile soil and delightful climate. In the interior, it rises into inaccessible mountains, from which numerous streams descend.

THE OCEAN.

(25.) *Ice-fields of the Northern Ocean.*

650. The *level of the Ocean* is the same in all parts of the world, except as it is varied by local causes. *Inland seas*, which communicate with the ocean by a narrow strait, like the Baltic and Black Seas, are generally higher than the o

in consequence of the streams flowing in from the land; and their height is varied by the state of the streams at different seasons.

Those *seas which open to the east*, generally have a higher level than the ocean, in consequence of the winds and currents which continually come from the east, between the tropics. Thus the waters of the Gulf of Mexico are from 20 to 23 feet higher than those of the Pacific near them; and the French engineers found the Red Sea 32½ feet higher than the Mediterranean.

651. The *depth of the Ocean* is extremely various, and its bed is evidently diversified with hills and valleys, mountains and plains. The tops of the mountains sometimes appear above the water, in the form of rocks, shoals, and islands; and vast spaces exist where the depth of the valleys cannot be sounded with the longest line. The greatest depth yet sounded is only 7,200 feet.

652. The *water of the Ocean* contains various salts, of which the most abundant is common salt, or muriate of soda. The proportion is from 1-23d to 1-25th of the weight of the water, varying in different parts of the globe. It diminishes in going towards the cold and polar regions; and is sometimes greatly reduced by the fresh water of rains and streams, near the land.

653. The *color of the sea* is generally a deep greenish blue; which varies much with the aspect of the sky, and is probably a reflection of its color. In *shallow water*, it becomes a light green, perhaps from the reflection of the bottom, or the fragments of sea weed and marine plants it contains.

654. Numberless small animals are found to float on the surface of the sea, which are luminous at night, and produce a beautiful *phosphorescence* on the waves. The path of a vessel is a line of light, and the water which she throws up in her progress, or which rolls over her decks, appears like liquid fire. Sometimes myriads of luminous spots and stars, float and dance upon the water, and assume the most beautiful and fantastic appearance.

655. *In approaching the poles*, the surface of the ocean presents to the traveller only an expanse of ice. In latitude 70° there is usually a small quantity of ice floating at all seasons; and in latitude 80° we meet with those vast, permanent fields, which seem to claim the name of continents.

656. *At the return of spring*, the ice around the north pole fills up the bays of Hudson and Baffin, and extends in an irregular, waving line, from Newfoundland to Nova Zembla. It passes along the Labrador coast, usually preventing all access to the land as high as Hudson's Straits; and thence by Cape Farewell, north-east to Iceland and Jan Mayen, and east by Cherry Island, to Nova Zembla and Siberia. In Baffin's Straits, there is usually a deep bay formed by the ice. Between Iceland and Spitzbergen, a remarkable promontory of ice extends to the south, varying somewhat in its situation, which forms the boundary between the whale fisheries on the east, and the seal fisheries on the west. The same mass seems to extend along the whole northern coast of Asia, until it unites the two continents, north of Beering's Straits. During the summer the coast of Asia is accessible, and the ice may be penetrated as far as latitude 80°.

657. The icy continent of the *southern hemisphere* commences in a much lower latitude; and has never been penetrated beyond latitude 74° 15′.

658. From these continents vast *fields of ice* are frequently detached, which float off to sea. They are sometimes so extensive that their limits cannot be seen from the mast of a ship. From the shores of the polar regions, lofty masses, termed *ice-bergs*, frequently break off, and form floating islands. They obstruct the polar seas at all seasons, and are occasionally found as low as latitude 40°. Some of the ice-bergs are 600 feet in height; and hundreds have been seen at once, surrounding a vessel in all directions. The beauty of these objects glittering in the sunbeams, surpasses every conception of one who has never seen them.

659. The ocean is continually moving in waves, tides, and currents. The *waves* on the surface of the sea are perpetual, and are produced chiefly by the wind. They resemble the waving of a forest, or of a field of grain, and not the current of a stream; and their effect does not extend beyond 100 feet in depth.

660. *Tides* are those regular elevations and depressions of the ocean which occur twice in every twenty-four hours. They are produced by the attraction of the moon, combined with that of the sun.

The waters of the ocean are most elevated in that spot over whose meridian the moon has just passed. After the moon has risen at any place, the tide begins to rise; soon after it has passed the meridian, the tide is highest, and gradually sinks until it has set. The tide is high again when the moon is on the opposite side of the earth; and then falls again until it rises. The time, like that of the moon's rising, is about 50 minutes later every day.

661. At the new and full moon, the attraction of the sun is united to that of the moon, and causes higher tides than usual, which are called *spring tides*. About the first and last quarters, the attraction of the sun counteracts that of the moon, and causes the lowest, or *neap tides*.

662. The influence of the moon, like that of the sun, is felt most near the equator; the *height of the tides* diminishes in going from this circle, and near the poles, they are scarcely known. In open situations, as in the islands of the Pacific Ocean, the tides rise at regular periods, and do not exceed one or two feet in height. When they meet a coast or bay, or pass through a narrow channel, the time is much varied, and the height greatly increased.

In the British Channel, the tide sometimes rises 40 or 50 feet, and at the mouth of the Indus sometimes 30. In the Bay of Fundy it rises 60 feet, and often so rapidly that the cattle feeding on the shore have been drowned before they could escape.*

663. *In inland seas and lakes*, as in the Mediterranean and the Baltic, the quantity of water is so small, that all parts are equally attracted, and there is no perceptible tide. But in wide bays and harbors, and in seas open to the great western current, as in Baffin's and Hudson's Bays and the Red Sea, the influence of the tides is felt.

664. At the equator, *the tides move* from east to west, following the apparent motion of the moon. In the Temperate Zones, they move towards the equator, as the centre of attraction.

665. The waters of the ocean are perpetually moving in *currents*, like winds, which seem to complete the circuit of the globe. Some appear to be *permanent* —others are *variable*, and change with the seasons, winds, or tides.

666. *The most regular and extensive current* on the globe, is that which flows constantly from east to west, generally extending 30 degrees on each side of the equator.

In the Pacific Ocean, its motion is uniform, and furnishes great aid to navigation. It passes south of New Holland, and through the islands of Asia to the coast of Africa and the Cape of Good Hope; but in consequence of the obstructions it meets, it produces numerous and variable currents in the Indian Ocean, which render the navigation dangerous.

667. *In the Atlantic Ocean*, the western current strikes the eastern projection of South America, and is divided into two portions; one of which flows along the coast of Brazil and passes into the Pacific, through the Straits of Magellan, with considerable rapidity. The other turns to the north, and passing through the Caribbean Sea, enters the Gulf of Mexico, and flows out through the Bahama Channel in the celebrated Gulf Stream.

668. The *Gulf Stream* issues from the gulf, with the velocity of 4 or 5 miles an hour, and flows to the north-east, along the coast of the United States. As it proceeds northward, it recedes gradually from the shore, and diminishes in velocity. On striking the banks of Newfoundland, it turns to the south, and appears to mingle with the western current again, near the Azores. It probably reaches the north-eastern coast of Europe also; for the productions of tropical America are often thrown upon the coasts of Scotland and Norway; and in one instance, the mast of a vessel burned in the West Indies, was cast upon the Hebrides.

669. There are two general *currents* which flow *from the poles* towards the equator. That which flows from the *north pole*, appears to strike the shores of Asia, and then pass round the North Cape into the Atlantic. It frequently throws whole forests of pines upon the coast of Iceland, which furnish the inhabitants

* Morse.

with much of their fuel; and sometimes piles up huge masses of ice, upon the shores, which are arrested in their progress to warmer latitudes.

670. The *southern polar current* is crossed and checked by the western current passing by Cape Horn, and the Cape of Good Hope. This prevents the ice islands from floating away into warmer latitudes; and probably is the cause of the great accumulation of ice around the south pole.

671. There are various *smaller currents* in different parts of the ocean. There is one of considerable extent flowing in towards the western coast of *Africa*, which has sometimes caused the shipwreck of vessels. It is remarkable that a current continually flows from the Atlantic *into the Mediterranean Sea*, so that vessels cannot come out of the Straits of Gibraltar, unless they are aided by a strong easterly wind.

672. When two opposing tides or currents meet, they often cause *whirlpools*. That of Charybdis, in the straits of Messina, was the terror of ancient mariners. The most remarkable known is the *Maelstrom*, on the coast of Norway. It roars with a tremendous noise, especially in a storm, and its influence is then felt for more than nine miles. Its power is such, that ships, and even whales have been drawn in, and ingulfed, from a distance of several miles.

673. The passage from New-York Harbor to Long Island Sound, which is called *Hurlgate*, is remarkable for its numerous whirlpools, produced by the flow of the tides through a rocky channel. It can only be passed with safety at particular times of tide. At other times, the appearance and roar of the whirlpools is terrifying to one who is not familiar with the scene.

674. Besides these motions, *the waters of the ocean and of lakes circulate* from the top to the bottom, in cold seasons and climates. When the water at the surface is cooled more than that below, it becomes denser (or heavier,) and sinks to the bottom; a warmer portion rises in its place; and it is cooled, sinks again, and gives place to another—until the whole mass assumes an equal temperature.

675. *Were this law to continue through all the degrees of cold*, the whole ocean would be reduced to the freezing point, and probably be congealed to the bottom; so that the heat of the Temperate Zones could never melt it. But by a wonderful direction of Providence, when water arrives at the temperature of 40 degrees, or 8 degrees above the freezing point, it *expands* instead of condensing, and becoming lighter, it remains on the surface, and protects the water below from the influence of the cold air. In this way, the greater part of the ocean is kept above the freezing point.

676. By the saltness of the ocean and its constant movements, it is prevented from corrupting, and preserved from the extremes of heat and cold. Its currents, flowing and returning from the warm to the cold regions, equalize in some degree, the temperature of the earth, and render countries habitable, which would otherwise be desolated with frost. The vapors, breezes, and showers which rise from it, refresh those which are parched with heat, and preserve them from becoming deserts.

Thus examination shows us, that what appears at first sight a useless waste of waters, is an indispensable provision of the Creator for our preservation and comfort. It also furnishes a habitation for innumerable fish, which supply a large part of mankind with food; and renders communication more easy, between the countries it seems to divide.

THE ATMOSPHERE.

WINDS.

(26.) *Water-Spouts.*

677. When the air over any place is more heated than that around, it is rarefied or expanded, and rises. The surrounding air rushes in to supply its place, and this produces a current called *wind.*

678. There are some *winds which blow constantly* in the same direction. Of this kind, there are *two general currents* of the atmosphere—that which follows the course of the sun in the Torrid Zone—and that flowing from the cold regions round the poles, towards the equator, which is chiefly felt in the Temperate Zones. Other winds are *periodical*, or blow only at certain periods of the day or the year; but these, as well as the constant winds, are chiefly confined to warm climates. Beyond latitude 40°, the winds are generally *variable.*

679. In consequence of the heat of the Torrid Zone, the air continually rises, and cold air rushes in from the poles. As the places under the equator turn faster from west to east than those towards the poles, the air is left behind, and seems to move in an opposite direction, following the sun. It thus forms constant winds from the east, called *trade winds.* At 30° north and south of the equator, the trade winds blow from the *north-east and south-east.*

680. *The trade winds extend* as far as 28° or 30° on each side of the equator, during the summer of each hemisphere; but on the coasts of America and Asia, they are felt as far as 40° By the aid of these winds, the Spanish vessels which sail

from Mexico to the Philippine Isles, often finish a voyage, nearly equal to half the circumference of the globe, in 60 days, without altering their course, or changing a sail. But in returning, they are obliged to go north, beyond the limits of the trade winds.

681. *In the Indian Ocean*, north of 10° south latitude, there are periodical winds called *monsoons*, which blow half the year north-east, and the other half south-west. They extend over the whole of India, and the sea-coast of east Persia. The south-west monsoon blows constantly, from April to October, bringing with it floods of rain, and dreadful tempests. During the rest of the year, the north-east monsoons produces a dry and agreeable state of the air. The change from one monsoon to the other is gradual, and accompanied by storms and hurricanes.

682. In islands and places near the sea, in warm climates, there is usually a wind from the land at night, and from the sea in the day, called the *land and sea breezes*. Without the sea breeze, the heat of many places in these climates would be almost insupportable.

In the Mediterranean sea, the West Indies, &c., the land breeze usually begins at 6 or 7 o'clock in the evening, and blows until 8 in the morning, when the sea breeze begins, increasing till noon, and gradually dying away in the afternoon. Between the changes there is a period of stillness, as between the ebbing and flowing of the tide.

683. *Hurricanes* are violent storms occurring in South America, the West Indies, and other hot countries, in which the wind changes in a short time to every point of compass, and blows with a violence which scarcely any thing can resist.

Hurricanes are attended with a great swelling of the sea, and sometimes with earthquakes. They happen in the rainy season, principally in August, destroying all the productions of the earth, tearing up trees, blowing down buildings, and inundating large tracts of country. The trade winds are interrupted during their continuance.

On the south-eastern coast of Asia, especially in the Gulf of Tonquin, tremendous storms of the same kind occur, which are called *Typhons* or *Tuffoons*.

The velocity of the trade winds is estimated by Lalande at 5 or 6 miles an hour; and of a brisk gale at 12 or 15. High winds move from 30 to 40 miles an hour, and storms and hurricanes from 50 to 100.

Winds are necessary to purify the atmosphere. They raise and transport the clouds from the sea, to fertilize the land, and serve to convey us over the ocean the great highway of the globe.

684. *Whirlwinds* are formed by opposite winds, meeting and moving swiftly in a circle, raising sand and light bodies into the air. In the deserts of Africa, they sometimes draw up the sand

into a moving *pillar*, which buries all in its way. When they appear on the ocean, they draw up the water, and produce *water-spouts*. In a water-spout, a column of water is seen hanging from the clouds, and descending until it meets a column rising from the ocean. (*Fig.* 26.) These unite and often move with rapidity, until they meet with some opposing wind, or other cause, which destroys them. They are not uncommon in warm latitudes.

685. The *quality of winds* is affected by the countries over which they pass; and they are sometimes rendered pestilential by the heat of deserts, or the putrid exhalations of marshes and lakes. Thus from the deserts of Africa, Arabia, and the neighboring countries, a hot wind blows, called the *Saniel* or *Simoon*, which sometimes produces instant death. A similar wind blows from the Sahara, upon the western coast of Africa, called the *Harmattan*, producing a dryness and heat, which is almost insupportable, and scorching like the blasts of a furnace.

686. In the southern countries of Europe, particularly Spain and Italy, a warm, unpleasant wind blows from Africa, which is called the *Sirocco*. It occasions great uneasiness in the human frame, irritating the nervous system, and checking perspiration. Its temperature does not exceed 95 degrees; but a dry, feverish heat is produced in the body, and such debility, that exertion is painful.

The Sirocco sometimes blows only a few hours; occasionally from morning to evening; and very rarely three days. The inhabitants shut themselves up in their houses to avoid its influence. It is singular that to the natives of cold climates, and to strangers in feeble health, it is often reviving.

The various winds of this kind are doubtless only blasts of heat from extensive deserts, under different names, varying in their power and effects according to circumstances.

687. Between the fourth and tenth degrees of north latitude, a part of the ocean, lying south of Cape Verd and its islands, is remarkable for calms, almost perpetual, attended with dreadful thunder and lightning. The showers are so frequent that it has been called "*The Rains*."

RAIN.

688. When water is dissipated into the air in an invisible manner, the process is called *evaporation*. *Spontaneous evaporation* is continually produced by the agency of the sun and air, from the waters of the ocean and the land. The watery vapors condensed by cold, or rising into the atmosphere to a region of the air lighter than themselves, form visible mists, or *fogs*, and the strata of visible vapors, called *clouds*.

689. The vapors thus accumulated in the clouds, at length fall in rain, snow, and hail, and return through the rivers, to the ocean. *Snow* consists of such vapors as are frozen while the particles are small. It is rarely seen below latitude 30° in America, and 36° on the eastern continent. *Hail* is a more compact mass of frozen water, which consists of such vapors as are united into drops, and are frozen while they are falling. It is scarcely ever known in latitudes higher than 60°.

690. The vapors which arise from the earth do not ascend above a certain *height*, and here neither rain nor snow are known. The ordinary height of clouds does not exceed one or two miles.

691. Various *quantities of rain* fall in different parts of the earth, according to the climate and situation. The quantity of rain and snow is greatest on *mountains*, and they contain the principal sources of rivers. *Islands and places* near the ocean, are of course more subject to rains and moisture, than the interior of a country.

692. The quantity of rain also varies with the latitude. In the *Torrid Zone* the evaporation is most abundant on account of the heat, and the greatest quantity of rain falls on this portion of the earth. It descends in one season of the year, and for the rest of the year, there is no rain.

From this circumstance the number of *rainy days* is smallest at the equator; and increases in proportion to the distance from it. From north latitude 12° to 43°, the mean number of rainy days is 78—from 43° to 46°, the mean number is 103—from 46° to 50°, it is 134—from 50° to 60°, 161.

The *average number of rainy days* in a year, for 20 years, in Salem and Cambridge, Massachusetts, and in 20 cities in Europe, is thus stated, with the number of fair and cloudy days for one or two years,

	Rainy.	*Fair.*	*Cloudy.*
Salem	95	173	90
Cambridge	88	—	69
20 cities in Europe	122	64	113
Cincinnati—variable		176	105

693. The *rainy season in the Torrid Zone* is during the summer, when the sun raises the greatest quantity of vapor, and of course it varies with this season on each side of the equator. In the southern regions of Asia, the rains accompany the southwest monsoons, which continue from April to October, and are attended with violent thunder storms.

The effects of these periodical rains are most remarkable in the northern tropical regions of Africa. Showers commence in April, and increase till June when torrents of rain begin to descend, and continue almost three months without intermission. The face of nature is soon changed; rivulets before dried up swell into mighty streams; the rivers overflow their banks; and the plains become vast lakes. In the course of September the rains cease, and not a drop

falls until the following April. On the opposite side of the equator, the rainy season is from October to March, and the remainder of the year is dry.

694. The Torrid Zone is the chief theatre of *thunder storms*. They are unknown in regions near the poles. It never thunders in Greenland, nor in Hudson's Bay. The electricity of these regions may perhaps be exhausted by the Aurora Borealis, or northern lights. In the Temperate Zones, thunder storms are more frequent and violent, in proportion as we approach the tropics.

695. There are some countries where *it scarcely ever rains*, as Egypt and several other parts of Africa and Asia. In South America the clouds seem to be checked in their progress from the Atlantic, by the Andes; and while the sides of these mountains are deluged with frequent showers, the plains of Peru and Chili, west of them, are entirely destitute of rain. Such countries are watered entirely by mountain streams, and by the dews, which are much heavier than in other countries.

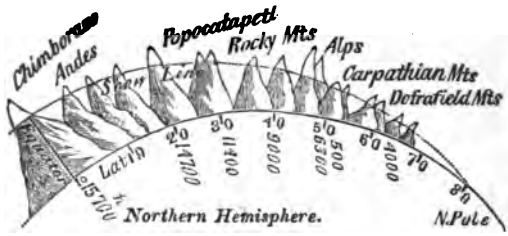
696. The following table shows the quantity of rain which falls annually in a number of places, arranged according to the amount.

	inches.		inches.		inches.
Grenada, (W. I.)	112	*Cincinnati*	36	Bologna	25.6
Calcutta	81	Manchester	36	Abo	25
Charleston, (S. C.)	54	Rome	35.7	Lisle	24
Franfort, (Ken.)	54	Liverpool (18 years)	34.1	Palermo	22
Williamsburgh, (V.)	47	Zurich	32	London	22
Cambridge	47	St. Louis (Bourbon)	32	Marseilles	21.4
Vienna	44.8	*Philadelphia*	30	Glasgow (17 years)	21.3
Pisa	43.2	Scotland (average)	30.1	Paris	20.8
Rutland, (Vt.)	41	Algiers	29.2	Sweden	19
Brunswick, (Me.)	40	Utrecht	28.8	Upsal	15
Naples	37.2	Padua	25.2	St. Petersburgh	12.5
England, (average)	36				

The average quantity, in different latitudes, as stated by Humboldt, is as follows.

		Mean temp.	*Rain.*
Under the equator		81.5	96 inches.
North Latitude,	19°	79.25	80
"	45°	68	27¾
"	60°	38¾	17.

TEMPERATURE.



(27.) *Line of perpetual Congelation.*

697. *Temperature* is the degree of heat or cold. It is measured by means of the mercury, or other fluid in a thermometer, which rises with heat, and sinks with cold.

The thermometer is an instrument consisting of a long slender tube, connected with a glass ball, which is filled with a fluid. The expansion of the fluid causes it to rise in the tube, and is measured by a scale of degrees, beginning at 0, or Zero. In freezing water, the fluid stands at 32 degrees of Fahrenheit's thermometer, and in boiling water, at 212. The usual heat of the human body is 96.

693. On account of the different states of the human body, *our sensations* in the same temperature are different, according to circumstances; so that one person is often cold, and another warm, in the same air. In judging of other climates therefore, we must remember that a degree of heat or cold, which may be very painful to us, may be less painful, or even pleasant, to those who are accustomed to it.

At 50 or 60 degrees of Fahrenheit's thermometer, the air appears *temperate* and agreeable to most persons in a temperate climate. At zero, it is intensely *cold;* at 70, it appears *warm*; and at 80, uncomfortably *hot.* But in warm climates, like that of North Carolina, it appears too cold, and fires are wanted, if the thermometer is below 70; and it is not considered warm, until it has risen to 80.* In hot climates, the variation of feeling is still greater, and it is not warm until the thermometer rises much higher.

The celebrated traveller, Bruce, defines the air to be *cool* when a person fully clothed may bear more clothes; *temperate,* when he may take moderate exercise without perspiring; and *warm,* when he perspires in walking about a room. "So different," he says, "are the sensations in a hot climate, that in Sennaar, according to these definitions, it is *cool* from 70 to 78 degrees—*temperate* from 78 to 92—and it is not *warm,* until the *thermometer* rises above 92 degrees."

699. In all northern latitudes, January or February is the *coldest month* in the year, and July or August the *warmest. The greatest cold during the day,* in all latitudes in the northern hemi

* Silliman's Journal.

sphere is usually about an hour before sunrise. *The greatest heat* in all latitudes between 60° and 35°, is from 2 to 3 o'clock; and between 35°, and the equator, from 1 to 2 o'clock. The temperature at sunset was found by Humboldt, from a great number of observations, to vary very little from the mean of sunrise and 2 o'clock.

700. In estimating the temperature of a country, we should refer, not to the heat of particular seasons, but to the average of heat and cold through the year, which is called *the mean annual temperature.*

701. The *heat of the earth* at a short distance below the surface, and that of permanent springs, is nearly uniform at all seasons; and usually corresponds to the mean annual temperature of the air. But in descending to a great depth in mines, the heat increases constantly. It continues almost permanently at 70 degrees, in some of the mines of England; and at 80 or 90 in those of Mexico.

In the caverns under the city of Paris, at the depth of 85 feet, the temperature varies only from 52 to 54 degrees, which is about the average of the year in the air above; while at the surface, it varies 90° at different seasons. The temperature of deep wells, in Philadelphia, Vermont, and other parts of the United States, has been found to correspond to the mean annual temperature of the air. In the coal mines of the north of England, the temperature is 70 degrees at the depth of 800 or 900 feet; when the air at the surface is only 48 or 49. In the mines of Valenciana, in Mexico, it is 92, when the air at the surface is at 60.

CAUSES OF TEMPERATURE.

702. The sun's rays are *the chief source of heat* to the earth; and those places which receive them most directly are hottest. For this reason, as already stated, the portions of the earth near the equator are hottest—the heat diminishes in going from the equator—the regions round the poles are the coldest parts of the earth—and generally, the temperature is proportioned to the latitude.

703. For the same reason, *a declivity towards the equator*, which receives the rays more directly than a level surface, is always warmest—*a declivity towards the poles*, which receives them obliquely, or is partially shaded, is always coldest.

It is well known, that the south side of a hill, in our hemisphere, is peculiarly warm; and the north side peculiarly cold. A south, western exposure is warmest, because it receives the sun's rays in the warmest part of the day; and a north-eastern exposure is coldest.

704. *When the sun's rays strike upon the land*, they are stopped and accumulated at the surface. They are then reflected into the air and to surrounding objects; so that the reflected heat is often greater than the direct heat of the sun. Hence *the heat of valleys*, where the rays are reflected by the mountains, is sometimes very great. In an elevated valley of Mont

Blanc, in Switzerland, it is so much increased by reflection, in the centre, that there is a spot covered with flowers and verdure in the midst of perpetual snows and glaciers.

705. Hence also the *heat is greatest* near the surface of the earth. It *diminishes* in ascending above the level of the sea, especially on lofty mountains, where it is continually reflected into the dry clear air around them, and is carried off by the winds which sweep over them, before it can be accumulated.

An elevation of 500 yards produces the same effect as a distance of 5,000 miles from the equator. At the height of 6,000 or 8,000 feet under the tropics, we find the same climate as in latitude 49° in France. At 13,000 feet we find the frosts of the Frigid Zone; and at 15,730 feet, mountains based upon the most scorching plains are capped with perpetual snow. In moderate ascents and temperate climates, the thermometer falls about one degree in ascending 300 feet; and the change is more rapid in rising higher.

The elevation of St. Gothard, about 3 miles, produces an increase of cold in latitude 46°, equal to that caused by a difference of 20 degrees of latitude. At the equator, snow begins to fall at the height of 13,040 feet, and is perpetual at 15,730. In latitude 20°, it begins to fall at the height of 9,912 feet, and is perpetual at 15,096. At the level of the sea it does not begin to fall till we reach 30° of latitude; and is not perpetual until we get within the polar circles. But particular *circumstances vary these limits.* Thus there are plains on the Himmaleh Mountains 15,000 feet above the level of the sea, which produce fine pasturage; and barley and buckwheat flourish at the height of 11,000 feet, which is above the regions of perpetual snow on the Andes, in the same latitude.

706. The imaginary line which marks the height at which perpetual snow begins, in different parts of the earth, is called *the line of perpetual congelation.* It is highest, of course, at the equator; and descends in going from it, until it touches the surface of the earth in the Frigid Zones. Its height in different latitudes is shown in the figure, (No. 27.)

707. *When the sun's rays strike upon the ocean,* they penetrate to the depth of 600 or 700 feet, and the heat is more diffused through the mass. The warm water remains at the surface, and the heat is carried off by evaporation, so that the body of the ocean is much cooler than the land, in hot climates.

The ocean has no varieties of surface, like those of the land. The circulation from top to bottom, already described (¶674) and the change of this circulation at 40 degrees, preserve it from excessive cold in the cold climates; and the constant currents mingle the waters of cold and of hot regions.

708. From the influence of all these causes, the *temperature of the ocean* is far more uniform than that of the land. The *difference* is far less between the temperature of day and night—of summer and winter—and of warm and cold climates.

The following table illustrates the comparative heat of the ocean and land.

Latitude.	Temp. of Ocean. water.	air.	Land. air.
5° to 6°	82 to 84		81
20°	70		80
40°	60		63
45° to 50°		41 to 68	35 to 66
68° to 70°	30 to 37	21 to 23	10 to 14

709. *When vapors are forming*, they absorb heat, and thus produce cold. When they are *condensed*, they give out this heat, and diminish the cold. Hence moisture and evaporation render a hot climate cooler, and a cold climate less severe—they produce cooler summers, and milder winters, in temperate regions.

It is well known that steam in condensing, gives out heat; and hence, is used in warming houses. In India, liquors are cooled by wrapping the bottles in wet cloths, and hanging them in the sun to produce evaporation; and it is common to cool a room by sprinkling water upon the floor.

710. From the effects of evaporation, *islands, peninsulas, and coasts*, have universally milder climates than inland regions, in the same latitude; as is the fact with England compared with Germany. The southern hemisphere, for the same reasons, has less difference in the temperature of seasons than the northern.

711. *Countries which abound with rivers, lakes, and marshes*, are also less subject to the extremes of heat and cold, than those which are dry. Thus the well-watered plains of India and South America, never have so excessive heat as the dry and sandy regions of Northern Africa; and in the regions of North America bordering on the lakes, the winters are much milder than in other regions in the same latitude.

712. *Countries covered with forests* are so protected from the sun and winds, that they are more moist than open grounds, and the climate is rendered milder in the same manner. Hence the *clearing of a country* from trees, renders the summers hotter and the winters colder. By admitting the winds of surrounding regions, it also renders the climate more variable.

Dr. Williams found the temperature of open grounds 12 degrees higher in summer and 7 degrees lower in winter, than that of forests. Open grounds are always frozen deeper than woodlands; and hence the spring advances later. They are more heated in summer; and hence the winter begins later. The snow lies more steadily in a forest, because it is less exposed to the winds and changes of weather. (*Williams' Vermont.*)

713. In addition to the direct effects of the sun, *the different portions of the earth exert a continual influence on each other*, by communicating their temperature directly, or by means of winds. The deserts of Arabia and Africa are like immense furnaces, increasing the heat of all the regions on the Mediterranean Sea, in the south of Europe and west of Asia. The

Mountains and table-land of Tartary increase the cold of the surrounding countries in the same manner.

714. *A country protected from winds*, will have a climate corresponding to its own latitude and exposure. But *a country which is destitute of forests and mountains*, and open to the wind from other regions, partakes of their climate. Its temperature is much affected by the prevailing winds; and it has variations corresponding to their changes. Thus in the United States, the winds often produce alternately the cold of the Polar Regions, and the warmth of the Gulf of Mexico—the moisture of the ocean and the dryness of the land.

715. When the *prevailing winds* to which a country is exposed, come *from polar or elevated regions*, the cold is greater than the latitude alone would make it. When they come *from warmer regions*, and especially from deserts, they increase the heat. If they come *from the ocean or large bodies of water*, they diminish both heat and cold, according to the climate; and render the temperature more uniform through the year.

716. *Siberia, and the northern parts of North America*, in addition to the effects of a northern declivity, have their cold greatly increased by the polar winds, which are not interrupted by mountains. *Europe* is much protected from them by its mountains, running from east to west; and they are always rendered milder by the ocean over which they pass.

The prevalent north-easterly and north-westerly winds render the *eastern coasts of America and Asia* peculiarly cold. The westerly and south-westerly breezes from the Atlantic and Pacific Ocean, increase the warmth of the *western coasts of Europe and N. America*. Places in Europe between 40° and 50° of latitude are as warm as those 7° farther south, in North America and Asia; and places north of 50°, in the west of Europe, generally correspond to those which are 12° farther south of them, on the eastern coast of either continent.

717. *The temperature of the seasons* does not vary in the same manner with the mean annual temperature. In advancing north, the cold of winter increases much faster than the heat of summer diminishes; and even in the Frigid Zones, the temperature is often as high in summer as in middle latitudes.

718. The *winters of maritime regions* are much warmer, and the summers much cooler than in inland regions, as already stated; and on islands, than on extensive tracts of land. The *difference of seasons* is much less in both cases. The difference of seasons is greatest on the eastern coast of N. America and Asia; and hence these are termed by Buffon, *excessive climates*.

719. The *rapidity in the change of seasons*, is also very differ-

ent in different latitudes; and increases in going north. In *warm and temperate regions*, the difference of temperature from one month to another is small. Thus, in middle Europe, April and May differ only 8 or 10 degrees; and on the coast, only 6 or 7 degrees. But in high latitudes, spring is scarcely a distinct season; and in excessive climates also, the change is rapid. In North America, the difference of April and May is 13 degrees; and at Drontheim, in Norway, it is 14 or 16. In insular climates, and in more temperate countries, the progress is gradual, and the spring is often the most delightful season of the year.

720. The various proportions of heat and moisture on the earth produce a great variety of *climates*, which have different degrees of salubrity. Those are most healthful which are most uniform in their temperature, and least liable to extremes of heat and cold, or to sudden changes. The *dry climates* found in inland and elevated regions, have usually pure air, and pure water, and are most favorable to health and longevity, as in Switzerland. A *cold and moist climate* produces frequent and unwholesome fogs, as in Holland. A *hot and moist climate* gives rise to noxious exhalations, and renders the air pestilential; as on the coasts of the Gulf of Mexico.

ISOTHERMAL LINES.

721. To give more distinct views of the distribution of temperature, Humboldt has traced a number of lines of equal heat, which he has termed *Isothermal lines*, the principal of which will be described chiefly on his authority. The temperature of places has not been ascertained by the thermometer, to the extent necessary for tracing these lines; but the situation of particular plants furnishes an index of more practical importance, and sometimes of greater certainty, than the records of thermometrical heat, on account of the frequent inaccuracy of instruments and observations.

In the *Torrid Zone*, the isothermal lines are nearly coincident with the parallels of latitude. But in the *Temperate and Frigid Zones*, where the influence of the sun is so much less, other causes already described, have more full operation, and the isothermal lines become very irregular. In Europe, especially in Western Europe, they rise towards the poles, and also on the western coast of America. In Eastern Asia and America, they nearly correspond, and are lower than in any other part of the northern hemisphere. (*See Isothermal Chart.*)

722. The *isothermal line of* 78 *degrees* of temperature is nearly correspondent to the parallel of 20 degrees of latitude in the northern hemisphere. In the southern hemisphere, so far as we can rely on observations made in South America, it appears to be

nearer the equator. This line forms the limit of the most valuable spices, and other delicate productions of the Torrid Zone.

In going north from this line, we find that the regions north of the deserts of Africa and Arabia are warmer than others in the same latitude, and the isothermal lines here ascend farthest from the equator.

723. The next important line of temperature which is distinctly marked, is *that of* 68 *degrees*, which corresponds nearly to the northern limit of the sugar-cane and coffee, and is generally the most southern limit of snow. In North America, it is almost coincident with the parallel of 30° or 31° of latitude, on the eastern coast. On the other side of the Atlantic, we find the same plants, and a corresponding temperature, in latitude 37°, in the south of Spain, Sicily, Asia Minor, and Syria. But on reaching Persia, it descends to 30°; it is still lower in passing round the table-land of Tartary; and probably does not extend beyond 30° in China.

724. The isothermal *line of* 59 *degrees* passes through Raleigh, in the United States, in latitude 35°; and in Europe it ascends to 44°, and passes between Rome and Florence. It is near the boundary of the olive and fig. If it is traced by these plants, it will be found following the range of mountains which lies north of the Mediterranean, and extending north of Greece and the Black Sea, to the Caspian Sea, south of Astracan. It descends probably to latitude 35°, after passing the great table-land of Asia. On the western coast of North America, it ascends to 37° or 38°, and perhaps still higher.

725. The *line of* 50 *degrees* corresponds nearly to the limit of the wine-grape in Europe. In the middle of Europe, it passes along the parallel of 50°; on the western coast it ascends to 52°; and in England to 54°. In going eastward from Germany, it continually descends; and we find it as low as 40° in Asia.

In North America, it commences on the coast at Boston; but on reaching the basin of the Mississippi, it ascends to the borders of the great lakes. It descends again beyond the Mississippi; but again rises beyond the Chippewan Mountains, and is supposed by Humboldt to strike the western coast in latitude 50°.

726. The *line of* 41 *degrees* corresponds nearly to the utmost northern limit of the oak and wheat. The last oaks are found on the coast of Norway, in latitude 63°—on the Gulf of Bothnia, above 60°—in Russia, at 58°—and in Siberia, still lower. In North America, this line is found at the bay of St. George, in Newfoundland, in latitude 49°, and generally at 50°, on the eastern coast; but it rises higher on the western.

727. The *line of* 32 *degrees*, on which the average tempera-

ture of the year is at the freezing point, passes from the North Cape of Europe, to Table Bay in Labrador, in latitude 54°. Its limit in other places is known only by estimation.

728. The following table is a comparative view of the mean annual temperature in different sections of the globe.

MEAN ANNUAL TEMPERATURE.

Lat.	Western Europe and Africa, and hot situations.		Eastern Coast of Asia, and interior places.		Eastern Coast of America.		Southern Hemisphere.	
2°	- - -	*deg.*	- - -		- - -		Guayaquil	81.5
10½	- - -		- - -		Cumana	81.5	6° Batavia	80.4
12	Pondicherry	81.3						
13	Madras	80.4						
14	- - -		Manilla	78				
15	Senegambia	79	- - -		17° Antilles	81		
19	- - -		- - -		Vera Cruz	78.8		
20	I. of France	80.1						
23	Calcutta	78.5	Canton	75	Havanna	77.9	Rio Janeiro	74.3
30	Cairo	72.7	- - -		St. Augustine	72.2		
31½	- - -		- - -		Natches	64.8		
32	- - -		Funchal	68.3	Charleston	66		
33	- - -		- - -		Ft. Johnson	66	Buenos Ayres	66.9
34	- - -		- - -		Huntsville	63	Pt. Jackson	67.5
36	Algiers	72	- - -		Raleigh	59	C. Good Hope	66.9
37	- - -		- - -		Williamsburg	60.8		
38	Palermo	63.5					*West'n U. States*	
39	- - -		- - -		Washington	56.5	Chilicothe	53.8
					Cincinnati	54.2	Marietta	55.6
40	- - -		Pekin	54.8	Philadelphia	54.8	Zanesville	55.7
41	Naples	63.5	Madrid	59.7	New York	53.8	Pittsburg	54.2
41½	Rome	60.4	(*elev.* 1978 ft.)		Providence	44.7	Council Bl'ffs	50.8
42½	- - -		- - -		Boston	48.6	Detroit (1818)	47
43	Mid. France	59	Marseilles	59	Salem	45.3		
	Toulon	62			W'nstown	45		
44	Nismes	60.3	Bologna	56	Brunswick	43	Sacket's Harbor (1814)	48.6
	Genoa	60.6			Middlebury	43		
45	Bordeaux	56.5	Padua	52.2	- - -		St. Peter's R.	43
46	- - -		Geneva	49.3				
47	Nantes	54.6	- - -		Quebec	41.7		
48½	St. Malo	54.1	Vienna	50.5	St. Geo.'s Bay	41		
49	Paris	51.8						
50	- - -		Prague	49			*South America.*	
51½	London	51.8	Gottengen	46.9	- - -		Falkland Is.	47
52	Amsterdam	53.4	Warsaw	48.6				
53	Dublin	50.1						
53½	- - -		Berlin	49				
54	York	49	- - -		Table Bay	32		
55	Copenhagen	45	Moscow	40.1	(Labrador)			
56	Edinburgh	47.7			57° Nain, Lab.	26.8		
58½	Orkney Is.	45.7	- - -		Ft. Churchill	25		
60	Upsal	41.9	Stockholm	42.2				
	Christiana	42.8	Petersburg	38.8				
63½	Drontheim	39.9	- - -					
64	- - -		Umea	33.3				
70	Wadso, Lap.	36	68° Enontekis	26.8				
71	Mageroe I.	32					*Arctic Regions.*	
72½	- - -		- - -		- - -		Melville Is.	1.3

REGIONS AND CLIMATES.

(28.) *Travellers in the Frozen Regions.*

729. The isothermal lines which have been described, divide each hemisphere into a number of *regions*, corresponding to the principal gradations of climate.

1. The region of spices, in the middle of the Torrid Zone, may be termed the Equatorial region. 2. The regions of the sugar-cane next succeed, lying on both sides of the tropics; and may be termed the Tropical, or Hot Regions. Beyond this, in the Temperate Zones, are—3. The Warm Regions—4. The Temperate Regions—5. The Cold Regions—6. The Frozen Regions, which extend into the Frigid Zone—7. Within the Frigid Zones, the Polar Regions, which include the tracts around the poles, incapable of cultivation.

EQUATORIAL REGION.

730. The *Equatorial or Torrid Region*, occupies the middle portion of the Torrid Zone, extending to latitude 20°, on each side of the equator. It is the only part of the earth which is sufficiently hot to produce the finest spices; and embraces Southern Asia, the middle countries of Africa, and the northern parts of South America.

In the level portions of this region, frost and snow are unknown, and the savage natives of some countries considered it a mere fable of Europeans, when they were told that water becomes solid with cold. The only season resembling winter, is the season of rain, and the trees are covered with perpetual verdure The mean temperature varies very little in different

countries, and is generally from 77 to 81 degrees. The heat is never so excessive as in the Temperate Zone, but from its constancy, the summer is oppressive to the natives, and dangerous to strangers.

During the hot season, it is unsafe to be exposed to the heat of the sun; and an umbrella, or other shade, is almost indispensable to the natives. A stranger cannot travel at this season, but at the hazard of his life. The heat continues through the night without any of that refreshing coolness, experienced in northern climates, except in countries near to the ocean, or to lofty mountains. The wooden furniture warps and shrinks, so that the nails fall from the tables, doors, &c. in Hindoostan. Even glass is sometimes cracked, by the intensity of the heat. The inhabitants generally cool their rooms by means of wet mats; and are obliged to close their houses, to exclude the hot air. Thirst is continual and parching—the body is debilitated;—all disposition to effort is destroyed; and motion often becomes painful. Hence indolence is characteristic of the inhabitants of this region.

731. In the *dry and stony districts* of Northern Africa, and some parts of Arabia, Persia, and South America, extensive tracts are rendered uninhabitable deserts, by the excessive heat; and there are no lofty mountains or large rivers, to alleviate its effects. No animal but the camel can subsist; and even the camel often perishes with thirst. The peninsular situation, and large rivers of *India and South America*, produce a degree of moisture which renders the heat less distressing.

732. In these and other *well-watered countries*, the fields are covered at all seasons, with flowers of every hue, and vegetables of every variety of beauty and flavor. But the same heat which produces this luxuriance, also occasions constant and poisonous exhalations from fruitful soils, especially after the seasons of the rains, and in marshy districts; and produces in other ways, a variety of dreadful diseases unknown in more temperate climates. They are peculiarly fatal to natives of the Temperate Zones; and a large number of those who emigrate to these regions, are hurried to an untimely grave, or become the victims of incurable complaints.

The storms of thunder and lightning are so tremendous here, that nothing experienced in northern climates, can give an adequate idea of them. These delightful regions are also wasted by the hurricane and the tuffoon. (§ 683) The deluges of rain which descend in the rainy season, while they purify the air and refresh the earth, often produce desolation by the rising of the rivers, and leave the seeds of pestilence in their stagnant waters.

ELEVATED TRACTS AND ISLANDS.

733. *In elevated tracts* within the Torrid Zone, we find some of the most delightful climates on earth, as in the valley of *Cashmere*, and some other portions of *Hindoostan* lying on the declivity of the Himmaleh mountains, from 2,000 to 8,000 feet above the level of the sea. The *table-land* between the eastern and

western *Gauts*, in the south of Hindoostan, partakes of the same character. There are no long days to produce the excessive heats of more northern climates, and the summers are even cooler than in the Temperate Zone; but a vertical sun maintains the temperature of a perpetual spring throughout the year. The streams are perennial, and the verdure constant. The air is salubrious, and the whole scene is cheering and delightful at all seasons. *Abyssinia* does not possess all these advantages; but its heat is much less than that of Northern Africa generally, on account of its elevation.

734. The *declivities and table-lands of the Andes*, from 1,800 to 6,000 feet above the sea, enjoy a similar climate.

In this region we find the city and a part of the province of Caraccas, the western parts of Peru, and New-Grenada, including Popayan and Santa Fe de Bogota; and the country surrounding the Andes of Chiquitos, comprising the northern part of La Plata and the adjoining portions of Peru and Brazil. Caraccas, and those parts of these districts on the western declivity of the Andes which lie near the sea, are destitute of rain, but usually obscured by clouds and watered by copious dews. Thunder storms are rare.

735. The districts of country *between these elevated temperate regions and the plains*, are free from the excessive heats of the plains, although they have not the climate which has been described. This is the fact with the lower portions of the declivity of the Andes, the Mexican Cordilleras, and the Himmaleh Mountains. Some portions of Burmah, Tonkin, and Cochin China, enjoy a similar advantage from their elevation.

736. Immediately *above the Temperate Regions* of the mountains, we find those which correspond to the coldest parts of the Temperate Zone in their winters; and thence, in succession, the climate of every region, even to that of the poles. At all elevations, however, the climates differ from those at the level of the sea, in having a temperature nearly uniform throughout the year.

737. *The islands of the Torrid Zone* are favored with a delightful climate, during a considerable part of the year.

In the West Indies, the spring commences in May, when the mean height of the thermometer is about 75 degrees. A fortnight of showers brings on summer; and scarcely a cloud appears again until August. During this season, the heat is very great, varying from 75° at sunrise, to 85 at noon. When the seabreeze is strong, it renders the temperature agreeable in the shade. The nights are clear and beautiful. In August the seabreeze declines; the air is sultry and almost suffocating; and the sky

begins to be covered with thick clouds. In the latter part of September and October, the periodical rains begin, and descend without intermission, covering the earth with a deluge. In November or December, the north winds commence, at first with showers of hail, and from this period till March is the winter—a cool, wholesome, and delightful season. The thermometer is at 72 at sunrise, and 76 or 79 at noon. The greatest height in Jamaica, is usually 87 degrees.

The *Sandwich, Society, and other islands of the Pacific Ocean,* enjoy a similar climate; but more mild on account of the extent of ocean around them. Cooke never saw the thermometer above 88 degrees at the Sandwich Islands; and but once at this height.

TROPICAL AND WARM REGIONS.

738. Next to the Equatorial are the *Tropical or Hot Regions,* which extend to the most northern limit of the sugar-cane, but will not produce the finest spices. They embrace Northern Africa and South-western Asia, on the Mediterranean, with the southern extremities of Europe; and in Asia and America, generally extend to 30° or 31° north latitude. A part of these regions lies within the tropics, and though it does not experience the full heat of the Equatorial Region, it has the general climate and seasons peculiar to the Torrid Zone. The parts most distant from the equator, have a climate nearly correspondent to that of the Warm Regions, which lie next to them; but the heat is greater and more constant; and they produce more delicate plants and fruits.

739. *Snow* is here almost unknown;—the streams are never frozen, and vegetables grow through the winter. The *thermometer* sometimes rises above 100, and continues at this height through the night. Travellers have been obliged to wet their clothes, and even wrap their head and face in wet cloths, at night, to protect themselves from the scorching air.*

740. From the limit of the sugar-cane, the *Warm Regions* extend to the northern limit of the fig and the olive, between the isothermal lines of 68 and 59 degrees; and of course have a temperature intermediate between these. The frosts are not severe in the plains, snow is rare, and the waters are seldom frozen over. The winters are distinguished more by dampness, than cold, resembling the spring of the Temperate Regions. The more delicate fruits, as the olive, the fig, &c. flourish; and vegetables grow during seven or eight months of the year.

---

* Humboldt's Tableau Physique.

741. *The principal countries of the Warm Regions on the eastern continent*, are in the south of Europe, and middle of Asia —including Portugal, Spain, Italy, the south of France and Russia, Turkey in Europe, Turkey in Asia and Persia. Independent Tartary and East Persia partake of the same climate.

These countries are distinguished from all others in the same latitude, by their dryness. Rain is rare, except during autumn and winter; the sky is generally cloudless, and the air clear and salubrious. In these regions, and still more in the Equatorial, the stars shine with a lustre unknown in northern and central Europe, and resembling that of a fine winter night in the Northern United States. In the Equatorial Regions, the fixed stars shine with a clear and steady light like the planets; the moon and planets are peculiarly brilliant, and the effect is heightened by the deeper tint of blue in the sky.*

The balmy air of Italy, Greece, and Asia Minor, has long been celebrated; and the north of Spain and south of France have similar characteristics. Snow is almost confined to the mountains. In the southern parts, as in the Hot Regions, the fields are seldom destitute of flowers, and vegetation continues at all seasons. The heat of summer is usually intense, and exposure to the mid-day sun is hazardous.

742. In many respects, the *climate of the Hot and Warm Regions* is nearly coincident. In both, the sea coast is refreshed with occasional breezes, at all seasons. But the heat on the eastern continent is much increased, and rendered more oppressive by the hot and noxious blasts from the deserts of Africa and Arabia; of which the Sirocco and Samiel are examples.

743. *Egypt* is entirely destitute of rain, and also a large part of Peru and Chili. Many portions of these regions suffer with *drought* in summer; it is necessary to water the fields by artificial means, even in the south of France and Russia; and the crops are often blighted for want of moisture. In all countries in the warm and Hot Regions, except Egypt, and the western declivity of south America, thunder storms are far more frequent and violent than in more northern climates. The Aurora Borealis is never seen.

744. With regard to *the salubrity of the Hot and Warm Regions on the eastern continent*, Italy and the interior of most other parts, enjoy a clear, healthful air. This is especially true of some of the more elevated tracts; and the dryness of the countries bordering on the deserts, also exempts them from disease. But the sea coast of Spain is subject to the yellow

* Life of Martyn.

fever; and Turkey and Northern Africa are often visited with the desolating plague. It is said by some that these diseases should rather be ascribed to the carelessness and filth of the people, than to the climate.

745. *The level portions of the southern United States, Florida and Mexico*, which lie in the Hot and Warm Regions, have a different climate from the corresponding countries in Europe, on account of the moisture which prevails. Vegetation is abundant, marshes are numerous, and the heat is therefore less scorching; but they are not usually favored with a salubrious air. Noxious effluvia are continually formed; and there is a general tendency to bilious diseases, and fevers, especially of the intermittent kind. The autumn is almost uniformly sickly; and the countenances of the inhabitants have a pale and sallow cast, instead of the bloom and freshness of more northern climates, or the brunette of the southern Europeans.

746. *The varieties of elevation and soil*, of course, produce variations of climate in particular parts of the Warm and Hot Regions. The deserts of Africa, Arabia, and Persia, are intensely hot, from the nature of the soil. The northern parts of Spain, Italy, Turkey, Persia, East Persia, and Hindoostan, and all the countries lying on the Caspian Sea, are crossed or bounded by ranges of mountains, many of which are covered with snow, and render the climate near them colder. The central portion of Spain, is also much more temperate than the coasts, from its being an elevated table-land. The winters near the mountains, and on the ground which ascends towards them, are often very severe, particularly in Turkey and Persia. Even the delightful regions of Asia Minor, and Syria or Palestine, embrace mountainous provinces where the severity of winter is felt; and in Persia, a few hours transport the traveller from the climate of Italy to that of Norway. In the elevated tracts, there is a great contrast between the heat of different seasons, and of day and night in the same place.

The region of the Caucasus, and the countries around the Caspian Sea, are subject to cold, piercing winds, and severe winters. The summers, in some of its narrow valleys, are intensely hot. Teheran is scarcely habitable in the summer, on account of the heat, while the winters are very cold. Excessive heat in the day is often followed by cold, and even frosty nights, which are rendered more chilly by the contrast.

747. A similar variety exists in the *Warm and Hot Regions of N. and S. America.* Mexico, in the northern hemisphere, and La Plata, Chili, and the southern part of Brazil in the southern, have every gradation of climate. The shores are scorched with the excessive heat which has been described;

while the table-land above enjoys a fine temperate air; and the summits of its mountains resemble the Polar Regions. The climate of Buenos Ayres is remarkably fine and equable.

748. In *the elevated regions of the southern United States*, lying among the Allegany Mountains, the Temperate Region of the Middle States extends as far south as 31°. From this circumstance, Tennessee enjoys a temperate, delightful climate; and the neighboring parts of Georgia, and the Carolinas which lie on the sides of the mountains, are also free from the excessive heats and violent diseases of the low country.

749. *South Africa and New-Holland*, which are the only portions of the eastern continent, lying within these regions in the southern hemisphere, have been little explored. The mean annual temperature is the same as in the northern hemisphere, so far as has been ascertained. From their insular situation, their climate is more moist; and is liable to great irregularity from the effects of winds and currents in the oceans which surround them.

TEMPERATE REGIONS.

750. The *Temperate Regions* extend from the northern limit of the olive and fig, to that of the wine grape; and the mean temperature varies from 50 degrees on the northern border, to 59 degrees on the southern. The transition from winter to summer is here gradual, and the four seasons are distinctly marked. The winter is usually from 3 to 4 or 5 months long in the northern parts, attended with a considerable quantity of snow; and the waters are frozen a part of the time. In the southern parts, the winter does not exceed 2 or 3 months, and the quantity of snow is small. Grain, vegetables, and many fine fruits are produced in abundance.

751. *The countries included in this region on the continent of Europe*, are France, Southern Germany, Austria and Southern Russia. They are exempt from the excessive heat of summer. They also enjoy mild and open winters, with little snow, and rarely have their rivers frozen. The weather is more uniform than in the United States, and remarkably salubrious.

Switzerland, which lies in this region, has every degree of cold beyond this, to that of perpetual snow. Many of the valleys are excessively hot in summer, and the climate universally depends more on the elevation and exposure, than on the latitude.

752. The *maritime climates* of England, Ireland, and Belgium, which are included in this region, are distinguished by

a great degree of moisture. The heat of the vapors tempers the *cold of winter*. The harbors of England are rarely frozen. In Belgium, in latitude 52°, and even in Edinburgh, latitude 57°, the winters are milder than in most parts of Lombardy. The cloudiness of the sky, and the frequency of showers, also diminish *the heat of summer*. Though not liable to extremes of heat and cold, they are subject to frequent changes, especially in those parts which are exposed to winds from the ocean. The spring commences early, and opens gradually; and in England, it is the most delightful season of the year.

753. The *moisture* is so great in these islands, and in Holland, as to swell the furniture brought from dry countries, and to produce rust very speedily on metallic instruments. Such climates are adapted to the production of pasturage, and the fields are distinguished by their beautiful and continued verdure. Fruits ripen with difficulty; and harvests are often injured by the moisture and rains.

754. *In North America*, the Temperate Region includes the southern part of New England and the Middle States, with the more elevated regions of Maryland and Virginia, and the Western States on the Ohio. Tennessee, and the western parts of the Carolinas, partake of the same climate from their elevation.

The mean annual temperature is the same as in this region in Europe; but it is differently distributed. In the Atlantic States, the climate is marked by extremes of heat and cold, resembling the south of Europe in summer, and the middle regions in winter. But the weather is variable, and neither heat nor cold lasts long at a time. Philadelphia has summers as hot as Montpelier and Rome, while its winters are like those of Vienna. New York has the summer of Rome, and the winter of Copenhagen. Quebec is as warm as Paris in summer; and as cold as Petersburgh in winter.

755. The *eastern coast of Asia* appears to be characterized by equal or greater extremes of temperature. Pekin is hotter than Cairo in summer; and as cold as Upsal, in Sweden, in winter.

756. The *Atlantic States* are sheltered by no ranges of mountains on the north, east or south, and hence the climate is variable. The cold of the northern regions, the heat of the southern —the moisture of the sea air, and the dryness of the mountainous regions, are alternately transported to them by the winds. The changes are frequent and sudden; and give rise to many diseases from which more settled climates are exempt. The winters are short, and often wet. The spring is damp and chilly; the summer has excessive heat, during the day, and

usually cool nights. The autumn is a serene delightful season, often extending to the latter part of December.

757. *From the influence of the great lakes*, the Temperate Region extends farther north in the interior, than on the coast; and beyond Lake Erie, reaches to the latitude of the southern point of Lake Huron. *The states west of the Alleganies*, and especially in the mountainous districts south of Pennsylvania and the River Ohio, are not liable to the same extremes of heat and cold. The winters are commonly milder, and cattle remain abroad through the year. The spring is earlier, and the weather is generally more serene and settled. But the basin of the Mississippi is open to the winds from the Torrid and Frozen Regions, and is therefore liable to very great changes. The temperature has sometimes varied on the Mississippi, 60 degrees in the course of a month; while in Philadelphia, Washington, and Detroit, the variation in the same month was only from 30 to 40 degrees.

758. The *basin of the Columbia River*, and the western declivity of the Chippewan Mountains, almost resemble Europe in mildness. The rivers do not freeze until January, at Nootka Sound; and the first frost observed by Lewis and Clark, at the mouth of the Columbia River, was in this month.

COLD REGION.

759. Next to the Temperate is the *Cold Region*, which commences with the northern limits of the wine-grape, in Europe, and extends to those of the oak. In Asia, it includes the southern part of Siberia—in Europe, the middle of Russia, Poland, Prussia, Northern Germany, Denmark, Holland, the southern part of Sweden and Norway, and Scotland. In North America, it embraces the British Provinces chiefly, with the most northern portion of the United States.

760. In this region, the transition from heat to cold is sudden; and spring and autumn are scarcely distinct seasons. The cold of *winter* is severe, from September to the middle or last of May. The temperature of Stockholm and Petersburgh is below the freezing point, nearly six months in the year; and the waters are usually frozen during this period.

Winds are seldom violent in the interior. Thunder and lightning are rare. The Aurora Borealis is frequent and brilliant. The air is keen and penetrating, but clear and salubrious; and the climate appears remarkably favorable to long life.

Even in the middle portions of Russia, when a person walks out in severe weather, the eye-lashes become covered with icicles, from the water that flows from the eyes; and the vapor of the breath is congealed on the beards of the

peasants, so as to render them solid lumps of ice. The cold is remarkably steady; and it is said that it is more easily endured than that of milder climates, which are subject to frequent changes. The snow is permanent; and the sled roads afford a rapid and easy mode of transportation through the winter. Even the Baltic Sea is sometimes frozen over, so as to be passed by travellers. In Nova Scotia and Canada, the rivers freeze to the thickness of several feet, and snow lies through the winter; while in France, in the same latitude, snow is rare, and the rivers are seldom frozen at all.

761. Little *vegetation appears* in the interior before June, and then springs up immediately after the snows are melted. The *summers* are short, but hot, and sometimes oppressive. They are as warm at Moscow, as in the middle of France. The climate is adapted to the coarser *grains;* but it will produce wheat generally; and in Denmark, and on the southern shores of the Baltic, this grain flourishes. It is *best adapted*, especially in the northern parts, to grass and pasturage, and is remarkable for its brilliant verdure.

762. The climate of the *islands and coasts* of this region is moderated, as usual, by the ocean. The lakes of the Faroe Islands are seldom covered with ice. The winter at the North Cape is milder than at Petersburgh; and Sweden is generally milder than Russia. In Denmark, and Holland also, the winters are comparatively mild; and the harbors on the coast of Norway are rarely frozen. Scotland has also less cold than the continent. But Scotland and Norway are subject to violent storms, which sometimes bury travellers and shepherds in the snow. In Norway, their fury is such that they extinguish fires, and rock the very houses. The heat of summer in these countries is also much diminished, by the clouds and moisture of the air, and the breezes from the sea. In Denmark and Holland, the sky is generally covered with clouds; and on the eastern coast of America, Newfoundland and Nova Scotia are remarkable for the frequency of their fogs; but still these countries are generally healthful.

763. We are not well informed concerning the climates of the *southern parts of South America;* but at least the southern extremity, and the islands, appear to resemble the Cold Region north of the equator. The extent of the ocean gives a peculiar character to the seasons in the *southern hemisphere*. In latitude 48°, the *summer temperature* is the same as the winter temperature of Toulon, Cadiz, and Rome. In Van Diemen's Land, which corresponds to Rome in latitude, the summers are 10 degrees colder, and correspond to those of Paris. In Patagonia, between 48° and 52° of latitude, the heat of the warmest months is not more than 42,5; while at Petersburgh, in latitude 60° it is 66, and at Upsal, 60

Snow and ice are more common and permanent in this hemisphere for want of summer heat. Snow has been seen at the Straits of Magellan in mid-summer, when the day was 18 hours long. Indeed it falls almost every day through the summer, in 52° or 53°, latitude, and the thermometer is rarely above 52 degrees. Most of the islands south of South America, are covered with perpetual ice.

In Lapland, pines grow 60 feet high; but at the Straits of Magellan, much nearer the Equator, a tree of that height is unknown. In Terra del Fuego, Byron found in December, (their mid-summer) a temperature like that of winter in England. When Sir Joseph Banks visited this country, two of his attendants died of extreme cold, in a night in January; which corresponds to our August.

764. The *winters* are not so much colder than those in the northern hemisphere, as the summers; and in some places they are warmer. Thus in Van Dieman's Land the winters are milder than those of Naples. In the Falkland Islands, latitude 51° 25′, the winters are milder than in London; so that the mean annual temperature is higher than in the same latitude in North America.

FROZEN REGIONS.

765. In latitude 70° in Europe, the birch, the hardiest of trees, generally ceases to grow, and man is compelled to give up cultivation. The portion of the northern Frigid Zone, south of 70°, and the neighboring portions of the Temperate Zone, form the *Frozen Region*, which extends to the limit of the oak. It is distinguished by the intensity of the cold, but is not entirely destitute of vegetation or inhabitants.

Within the polar circle, the summer is almost perpetual day, and the winter almost perpetual night. Spring and autumn are the dawn and twilight, which differ little from the winter in cold. The darkness of winter is much diminished by the length of twilight, and especially by the peculiar brightness of the moon and stars, and the Aurora Borealis, or northern lights, which enable the inhabitants in many countries of this region, to continue their hunting and other labors, through the night.

The *Aurora Borealis* assumes every variety of color and form. Sometimes there is a single steady stream of light, shooting from one side of the hemisphere to the other. Generally, there is a brilliant central spot along the horizon, from which long columns or pyramids of undulating light, shoot up towards the zenith. These often unite at some point above, from which other streams issue with fresh splendor, and in new varieties of form. So singular and fantastic are these appearances, that the northern barbarous nations call them "the dance of the spirits."

This beautiful phenomenon occurs frequently throughout the Frozen Region; and indeed extends south to the Warm Region; but its brilliancy is gradually diminished, in going towards the equator.

766. *In Greenland, Lapland, and the coldest countries of this region*, brandy and mercury freeze during the winter; and masses

of snow and ice continue through the summer, covering a large part of the country. Wells are frozen at a great depth in Siberia; and at Hudson's Bay, and in most parts of this region, no water can be obtained in winter except by melting snow and ice. At the depth of three feet, the ground is frozen in summer at Hudson's Bay; and lakes and standing waters of no great depth are frozen to the bottom in the winter. The inland waters continue frozen from 7 to 9 months; and snow, which begins to fall in August, continues from 8 to 10 months in all parts.

During the winter, the inhabitants of the coldest parts remain crowded together in small huts. The whole inside of a hut, or ship, is usually lined with ice, formed from the vapor of the breath, which must be cut away every morning. The inhabitants of Siberia stop the openings of their houses with ice, and use it instead of glass. If the cold air suddenly enter a house, the vapors fall in a shower of snow. Every part of the body must be covered in going out, or it is instantly frozen. The air, when breathed, seems to pierce and even rend the lungs. The cup often freezes to the lips, if it is touched in drinking. The provisions must be cut with hatchets and saws. Trees and the beams of houses are split by the frost, and rocks are rent with a noise like that of fire-arms. Meat is preserved here in a frozen state, without any care. Frozen fish and the carcasses of animals, are transported from distant portions of Russia, to the markets at Petersburgh, and other large towns, without any injury. The snow forms smooth and permanent paths for sleds, over which they travel with great rapidity, chiefly with reindeer and dogs, as represented in the engraving, No. 28.

767. The *change from winter to summer* is very sudden, and the valleys are covered with grass a few days after the snow has melted. The temperature of the *summer* is very uniform, and the heat of the sun is often oppressive from the length of the days. At Enontekis, in Lapland, latitude 68°, July is as warm as at Edinburgh, in latitude 56°; and the heat produces immense swarms of musquitoes and other insects, by which the inhabitants are greatly molested. In most parts of this region the summer is too short to bring grain to maturity. Cultivation is practised only to a very limited extent, and without any certainty of a crop, although the latitude of this region in North America, is the same with that of Denmark and England. In Lapland, the air is very dry, and a summer shower is rare.

768. The *coasts and islands* of this region do not suffer the same intense cold with the inland portions; and it is stated by travellers, that a winter in Iceland, is not colder than in the south of Sweden. But the climate is more moist, and often less favorable to the progress of vegetation.

POLAR REGIONS.

769. It has already been stated (¶ 727,) that the regions north of latitude 71° in Europe, and 54° in North America, have a mean annual temperature below the freezing point. In *Spitzbergen*, the average heat of the summer is only 2 or 3

degrees above freezing; and the cold in winter renders it uninhabitable. At *Melville Island*, in North Georgia, latitude 72½°, Parry found the mean annual temperature only 1½ degrees; the lowest yet observed. It has also been stated, that the *polar ice* commences in a lower latitude in the southern than in the northern hemisphere; and hence probably, the whole region within and near the Antarctic circle has a greater degree of cold. The central portions of the Frigid Zones are believed by some to be regions of perpetual ice, almost destitute of animal or vegetable life; while others suppose the sea may be open around the poles.

The *habitations of men*, are not found farther north than latitude 78°. No inhabited land has been discovered beyond latitude 54° or 55° in the southern hemisphere; and the climate of the islands in the southern ocean, appears to be too severe to admit of the residence of man.

Capt. Cooke found an island in latitude 54° or 55° south, almost covered with snow many fathoms deep, in mid-summer; and the coast was terminated by walls of ice, of considerable height. A similar account is given of the New-Shetland Isles, in latitude 64°. South Georgia, in latitude 56°, has perpetual snow upon its plains. In latitude 60°, Cooke found the heat of summer never above 35 degrees, and water was daily frozen.

PRODUCTIONS OF THE EARTH.

VEGETABLES.

770. There is an immense variety in the *character of the vegetable tribes*. Few plants are universally diffused over the earth; but every portion is supplied with some adapted to it. Some belong to mountains, others to valleys, and others still to plains. Every species of soil has vegetables peculiarly adapted to it. Some plants are confined to water, and some to moist regions. Others grow only in dry tracts, or on the surface of naked rocks. Some require the hottest climate, and some a temperate air; and some will thrive only in the midst of ice and frost. In this way, nearly the whole surface of the earth is covered with vegetation, and plants are found even in the dark vaults of caverns and mines, and in the bed of the sea.

Some plants will flourish with a high degree of heat, for a short time, although it is followed by severe cold, like that of the Frigid Zone. Others require only a moderate heat, longer continued, and are adapted to elevated regions. Many small plants will flourish where trees will not, and some approach the region of perpetual snow. Those regions where no other vegetable will grow, are provided with the hardy lichen, a nourishing species of moss, capable of supporting men and animals, which is found beneath the snow in the depth of winter.

771. The celebrated traveller Humboldt states that *the species of plants known* a few years since, amounted to 44,000, of which 17,000 are found in America. More than half the whole number belong to the Torrid Zone, although this part of the earth has been least explored by botanists; and generally the number increases with the heat of the climate. Spitzbergen is estimated to have only 80 species. Lapland and Iceland have more than 500 each; Sweden, 1,300; one of the states of Germany, 2,000; and the island of Madagascar 5,000. [More recent discoveries have increased the whole number to 56,000.]

Of the plants above mentioned, 6000 belong to the class, Cryptogamia, such as the mosses, ferns, &c. The remaining 38,000 are distributed as follows:

America, both Temp. Zones	4,000
Do. Torrid Zone	13,000
Asia, Temp. Zone	1,500
Do. Torrid Zone	4,500
Polynesia and Australia	5,000
Europe	7,000
Africa	3,000

772. Of all these species, *the most important* are those which furnish the food of men and animals, including the various kinds of grains, fruits, roots, and grasses. Some are important for clothing, as flax, hemp, and cotton. Others are valuable as medicines and dyes. There are only a few indeed, of this large number, which are not found in some way useful.

773. From the enumeration above given, it will be seen, that *each grand division* of the world *has many peculiar vegetables* which are native in it. The potato and Indian corn were unknown in Europe, until they were procured from America; and many of our most useful vegetables were transplanted from the Eastern Continent. The fir tree, which is so abundant in North America, is unknown in South America.

Every great basin, or great natural division of a country, may also have peculiar plants which have not passed the seas or mountains which bound it.

774. Particular *plants extend farthest from the equator*, where there are no ranges of mountains from east to west, to interrupt their progress. Thus the plants and animals of hot climates are found farther north in the basin of the Mississippi, than in the Atlantic States, where the mean temperature is the same. The impression thus produced, that the climate is warmer, is found incorrect.

775. A small number of valuable plants appear to be *confined to their native soil;* as the *clove and nutmeg* to the Spice Islands—the genuine *cinnamon* to Ceylon—and the best *tea* to China. But the seeds of most useful plants have been scattered through all the climates which resemble that of their native soil, by means of wind and the currents of the ocean, the flight of birds and the migration of animals, and especially, by the long and extensive intercourse between the inhabitants of different portions of the globe.

The *geographical situation of vegetables* may, therefore, be considered as dependent on the temperature, moisture, and soil of countries—whether it be produced by the latitude, elevation, or local situation. We often find vegetables far removed from their appropriate latitude by local circumstances. Mountainous countries are especially remarkable for the variety of their vegetables. Thus at the foot of Mount Ararat, we find the plants of Turkey; at its middle height, those of France; and on its top, those of Sweden. The mosses of Lapland are found on the summits of the Alps and the Andes; and the deep mines of Saxony produce some of the plants belonging to the summits of mountains.

776. *The boundaries of particular plants are apparently changed* in some instances, because they vegetate in regions where they lose their peculiar character and flavor; and many plants may be cultivated by means of walls or hot-houses, which give them an artificial climate; like the peach and the orange in England. But in the following account, *a plant is considered as belonging to those regions* only, in which it will flourish and bear fruit with the natural temperature of the seasons.

POLAR, FROZEN, AND COLD REGIONS.

777. The *centre of the Frigid Zone*, so far as travellers have been able to examine, appears to be entirely destitute of vegetation. The whole zone contains few species of plants, and the chief *vegetables suitable for food*, are the lichen and other mosses, and ferns. There are a few *shrubs*, such as the currant, the cloudberry, &c. which produce berries—the luxuries of this dreary region. In the heat of a polar summer, under the influence of perpetual day, *the growth of plants* is rapid, and the *produce* often abundant. The *verdure* in these regions is chiefly confined to the south side of the hills. Its duration is short, but its appearance

is brilliant. Lapland is the only country within this zone where the coarser *grains and pulse* can be raised; and these, only with very great difficulty.

778. *In advancing north from the polar circle*, the birch which bears the severity of the cold best, dwindles in size, till at last it ceases to grow at 70°, the point where man gives up the cultivation of grain. North of this, shrubs, bushes, and herbaceous plants only are to be met with. Wild thyme, creeping willow, and brambles, cover the face of the rocks, and the Arctic cloudberry here assumes its most delicious flavor and perfume. Shrubs next disappear, and their place is supplied by the saxifrage, primrose, and the low flowering herbs, and grasses. The lichen, which feeds the reindeer, sometimes mixes in the turf, and sometimes of itself covers vast tracts of country. Its white tufts stand in clumps of various forms, looking like hillocks of snow. Beyond this, we find only a naked, sterile soil, and eternal snows, with here and there some hardy mosses on the borders.

779. On the borders of the Temperate Zone, or just within the Arctic Circle, the *evergreens*, fir, pine, &c. commence. The *forests of the Frozen Region* are chiefly composed of these trees, mingled with the birch and willow. The potato, cabbage, turnip, radish, and similar *garden vegetables*, may be cultivated in this region. Cranberries, whortleberries, currants, and other berries, are still the only *fruits*. *Wheat* will scarcely come to perfection, except in Norway and Sweden. Rye, oats and barley, which are best suited to a cold climate, are raised with difficulty. The crops are so precarious, that the people are subject to distressing famines, and are often compelled to grind the bark of trees, and mingle it with their grain for bread. The most valuable vegetable productions are the timber of their forests, and the turpentine, pitch, and tar, obtained from the pine and fir.

780. In the *Cold Regions*, where the people are industrious, *grain* may be raised in sufficient abundance. Wheat flourishes best in the southern parts. The *pastures* are rich, and the verdure fine. The more hardy fruits, apples, pears, cherries, and plums, of the finest quality, are produced in the greatest abundance; but most of these grow languidly in Sweden. All the species of *berries* are abundant, and some very delicious, as strawberries, gooseberries, &c. The walnut, and most of the ordinary *nuts*, and the common garden vegetables, peas, cabbage, turnips, potatoes, &c. flourish best in this part of the Temperate Zone. It is also the native climate of *oats*, *hemp* and *flax*, and the most favorable for their cultivation.

At the northern limits of this region, the oak commences, and in advancing towards the south, the *forests* are composed of the oak, the elm, the maple, and the beach, instead of the birch, willow, fir, and pine.

TEMPERATE AND WARM REGIONS.

781. The *Temperate and Warm Regions* yield in the greatest abundance, most of those productions which administer to the use and pleasure of man. Within these limits, are raised in their greatest perfection, wheat and barley, the *grains* which yield the most nutritive bread. There, almost exclusively, are produced the wine-grape, whose juice is so much valued; and the mulberry, whose leaves feed the worm which supplies us with silk.

782. The *Temperate Regions produce* apples, pears, and the *fruits* of the Cold Regions in perfection, on the northern borders; but in the southern parts, these fruits lose their finest flavor; and degenerate entirely on the borders of the Warm Regions. The *wine-grape* first appears on the borders of this region in Europe; and the peach, apricot, almond, and mulberry flourish. Wheat is cultivated with ease, and all the *grains* produce abundantly. Vegetation rarely suffers from drought, and the verdure is fine.

783. *At the limits of the Warm Regions*, we first meet with the olive, which produces olive oil, and the fig; and in Europe, the orange and lemon. But even in Europe, the orange does not grow in perfection above the middle of these regions. The *cork-tree*, whose bark furnishes us with cork, also belongs to the Warm Regions.

Vegetation often suffers for want of *moisture;* and the fields and hills have somewhat of a brown and scorched aspect, in place of the beautiful verdure of more Northern Regions.

TROPICAL AND EQUATORIAL REGIONS.

784. In the *Tropical or Hot Regions*, we first meet with the sugar-cane and coffee. The orange, lemon, citron, and fig, are found here with the most delicious flavor; and the date, and some other tropical productions, are added to the number of *fruits*. Indeed, *the productions generally correspond* to those of the Torrid Zone, which will be next described; except that in the northern parts, the most delicate fruits and plants have not so fine a flavor.

785. In the *Torrid Zone, the dry regions* are scorched with a burning heat, not less fatal to vegetable, than to animal life. But when *moist countries* are cherished by the intense heat of this zone, they produce plants of the most splendid beauty, of exquisite flavor, and of immense size. The choicest vegetables which contribute to the sustenance and pleasure of man, and the cure of his diseases, are found in such profusion and luxuriance, as is unknown in other climates.

786. The multiplicity and variety of the vegetable tribes are so great, as to preclude any accurate enumeration. *Trees* are far more numerous in proportion to other plants, than in the Temperate Zones. The same tribes which are *the slender and humble plants of northern regions*, here spread into lofty trees. Many of these are perpetually adorned with *flowers*, larger, more beautiful, and more odoriferous than those of the choicest shrubs and plants of temperate climates. The *bamboo* and *the sugar-cane* attain the height of 25 or 30 feet. The *forests* are knit together by rattans, and other vines and shrubs, so thick and luxuriant, that it is almost impossible to penetrate them with axe or fire, and furnish a secure retreat to the myriads of animals and insect tribes, with which this zone abounds. The falling leaves are renewed at every season of the year, and *vegetation* flourishes in perpetual youth. The earth is never exhausted, but constantly seems to acquire new fertility from the decay of its abundant vegetation. But we do not find here those flowery *meadows*, covered with herbage, which form the chief beauty of temperate countries.

787. *Some of the trees of this zone* attain a size, of which the native of northern countries can scarcely conceive. The mighty *baobab*, on the plains of the Senegal River, in Africa, is found with a trunk 50, 60, and even 70 feet in circumference; while each of its branches equals an ordinary tree in size. One of the leaves of the great fan-palm will cover ten or a dozen men, and two or three are sufficient to cover a cottage. *

788. In the Temperate Zones, forests are considered as wastes, and *the trees are useful* chiefly for their timber. But in the Torrid Zone, they produce a variety of excellent fruits and juices, for the support of man, which render them as valuable as the most cultivated fields.

The various *species of palm* trees, which rise in a slender, lofty trunk, covered at the top with a thick tuft of leaves, are characteristic of these regions. They yield a rich juice, both nourishing and refreshing, and which is easily formed into wine. The *sago-palm* furnishes a thick, nourishing juice, which is dried, and forms a very useful article of food. The *bread-fruit tree, and plantain*, produce fruits resembling bread prepared from grain; and the *gum forests* of Africa furnish Gum Arabic, a valuable article of food for those who are crossing the deserts, on account of its dryness and lightness.

In these forests also, we find the hardest, most durable, and most beautiful *kinds of wood*, as the mahogany, the iron-wood, and the teak-tree which is more durable than the oak for ship building. The various kinds of dye-wood, such as logwood, camwood, &c. can only be obtained here.

789. This zone also abounds with the most delicious *fruits*—the tamarind, pine-apple, guava, banana, &c. It is the native and the only region of the *spices*, cinnamon, cloves, nutmeg, and pepper; and of myrrh, frankincense, and the various *fragrant and medicinal gums*. *Coffee, tea, and the sugar cane*, are articles peculiar to the Torrid Zone, and the Hot Regions bordering on it.

790. *Wheat* and most other grains of temperate climates, begin to degenerate in the Warm Regions; and in the Torrid Zone, they are productive only on ele-

* Edinburgh Gazetteer

vated grounds. The *principal grains cultivated*, are maize, which flourishes from the Cold Regions even to the equator—rice, which is probably the chief food of one third of our race; and millet. Valuable *substitutes for grain*, are found in the bread fruit and plantain—the cassava and manioc roots of America—the taro-root of Polynesia—and the yam—which form a bread not less palatable than grain, and produce far more abundantly.

791. *In ascending the mountains* of the Torrid Zone, as the temperature varies, each section has its own distinct plants, and we find in succession the productions of every region from the equator to the poles.

(II.) ANIMALS.

(29.) *Termites Ant-hills of the Torrid Zone.*

792. Among the *animals of the earth*, a small number of beasts of prey, and poisonous reptiles, and mischievous animals or insects, are only scourges to the human race. But the greater number of the animal tribes are subject to the control of man, and contribute very much to his subsistence and comfort. The variety of form, and size, and strength, and uses, which is found among them, and their adaptation to every existing climate and soil, form a distinct source of testimony to the wisdom and goodness of the Creator.

793. *Domestic animals* supply man with milk and the luxuries formed from it, and feed him with their flesh. Their skins, and wool, and hair, form important articles of clothing. Many of the wild animals are eagerly hunted for their skins and fur, or for the oil procured from them.

794. The *situation of animals*, like that of vegetables, is regulated chiefly by climate or soil. Some animals subsist in almost all latitudes where cultivation is practicable, and inhabitants can become numerous. By means of commerce, they have been distributed to every portion of the globe. Among these, a kind Providence has placed *the most useful domestic animals*. The ox, the horse, and the swine, are found in all latitudes between the Frozen Regions on the north and south; and the sheep, the goat, the dog, and the cat, even within these regions. Among wild animals, the fox, the bear, the hare, the deer, the squirrel, the rat, the mouse, and the weazel, are found in all habitable latitudes.

795. The *dog* is the companion of man, in all climates. In many countries of the Frozen Regions, dogs are the only domestic animals. They are harnessed in

sledges, and travel with great rapidity, guided chiefly by the voice of the driver. The dog and the swine are almost the only domestic animals found in the islands of the Pacific Ocean; and both are used for food. The *cat* is scarcely less common than the dog. The *rat and mouse* also, are found wherever ships have gone or man exists, south of the Frozen Regions; but in Lapland, Greenland, and Northern Siberia, we find in their place the leming, or Norway rat, which inhabits some parts of these regions, and migrates in vast bodies from one district to another in search of food.

796. Of all wild animals, *the fox* of various species is the most extensively distributed. Vast troops inhabit Nova Zembla and the shores of the Frozen Ocean; and they are not less numerous in Bengal, Egypt, and the coast of Guinea. The new continent is also said to abound with them; but their existence in South America is doubtful. The squirrel also inhabits all parts of Europe and Asia, from Siberia to Siam; and is found in Africa and America.

797. The temperature of the ocean is so uniform, that the various tribes of *fish* distribute themselves through all latitudes, more readily and extensively than other animals. Their aspect, however, varies greatly in the extremes of heat and cold. Those of cold regions migrate in the winter, to the seas and rivers of more temperate countries, where many of them deposite their spawn. In this way, the shad and the salmon visit the rivers of the United States, and the herring the western coast of Europe; and furnish valuable stores of food. The banks of Newfoundland are the resort of immense numbers of codfish; and 100,000 men are employed here in the fishery.

Many species of *birds* also of the Temperate Zones, migrate during the winter to warm regions, and return every spring to their usual haunts. While many animals are thus extensively scattered, each zone is marked by the residence of animals peculiar to it.

TORRID ZONE.

798. The *Torrid Zone* is not less remarkable for the luxuriance of animal than of vegetable life. It produces the largest and most beautiful animals, as well as the fiercest and most dangerous, found upon the globe. "The mighty *elephant* traverses its forests, and the *rhinoceros* and *hippopotamus* roll their enormous bulk in its streams." The hippopotamus is found only in the rivers of Africa.

799. The two-horned *rhinoceros* occurs only in Southern Africa; but the species with one horn is found in the East Indies and China, as far north as 30°. In this zone are found the most formidable *beasts of prey*—the lion, the tiger, the leopard, the panther, the ounce, and the hyena of Africa and Asia, and the jaguar and puma, of South America.

The *lion* is chiefly confined to Africa and Western Asia, and is most fierce in Northern Africa. The royal *tiger* of India is surpassed by none of the beasts of prey in ferocity and power. It sometimes strays as far as 40° or 50° north latitude. The *jaguar* vies with the tiger in size and fierceness, and resembles the panther in its skin. The *puma* or *cougar*, sometimes called the American lion, is destitute of a mane, and has more resemblance to a wolf in the form of its body. It is found as far as 50° south of the equator. The largest quadruped of South America is the tapir, about the height of a cow.

800. The Torrid Zone swarms with *reptiles*, some of enormous strength, and many armed with fatal poison. Those of the *crocodile family*, the crocodile of Africa, the alligator and cayman of America, and the gavial of India, fill all the rivers of this zone, and stand ready to devour the incautious traveller. The *anaconda*, or boa constrictor, of South America and Africa and the Asiatic Isles, is compared to the mast of a ship, and crushes large and powerful animals for his prey, by winding his coils around them. The asp, and many of the smaller reptiles, are armed with a poison of peculiar deadliness.*

801. The family of *bats* is distributed throughout the world, but it is only in the Torrid Zone we find the vampire, that species which sucks the blood from man while sleeping.

* Edinburgh Gazetteer.

Even *insects* appear in this zone in such numbers and power as to become formidable. The poisonous tarantula, and the scorpion, are natives of this zone The *termites*, or white ants of India and Africa, penetrate the beams of houses, and destroy timbers, chests, books, and clothing, in a few hours. They are only a quarter of an inch in length, but they erect pyramids of clay sufficiently compact to sustain the weight of several men, to the height of 10 or 12 feet. These are divided very curiously into numerous apartments, and are far more wonderful works in proportion to the size of the animal which erects them, than the pyramids of Egypt.

802. The air of most countries in this zone is filled with *small insects*, many of which inflict painful stings, and the forests swarm with such multitudes, that the traveller can scarcely avoid swallowing them with his food, and inhaling them with his breath. *Locusts* and even *flies* assemble in such immense bodies as to lay waste the earth, and drive nations before them. This scourge is often felt in the Hot Regions bordering on this zone. At night, the tropical forests are brilliantly illuminated by myriads of *fire-flies*.

803. Among the *quadrupeds*, the bounding antelope, the striped zebra, and the tall camelopard, are remarkable for beauty. The gazelle, the species of antelope so distinguished by the beauty and brilliancy of its eyes, is found in the Caucasus, and in Turkey, Arabia, and Africa. The camelopard, which is from 10 to 15 feet in height, is found in the middle countries of Africa, as far as 28° of south latitude.

804. The numerous *birds* of this zone are adorned with the richest *plumage*. The peacock is a native of India. The feathers of the ostrich and the bird of paradise are the ornaments of kings. Many, like the parrot, utter a sound resembling the human voice. But they are generally inferior to those of the Temperate Zone in *the melody of their notes*. Some of the tropical birds rival quadrupeds in *size and strength*. Such are the ostrich of Africa—the nandu, or ostrich of South America—and the condor, a bird of prey, which soars above the tops of the Andes.

805. The forests are enlivened by the various tribes of *monkeys* which are confined to this zone, and the Hot Regions bordering upon it. The *ourang outang*, and its kindred species, which approach most nearly to man in appearance, are found in Borneo, and a few of the Asiatic islands and in some parts of Africa.

806. The tropical seas are also populous. The *fish* here shine with brilliant colors, and the flying fish is seen skimming through the air. The shark displays the ferocity of a beast of prey. The *shell-fish* are larger and finer than in the colder regions. The oyster which furnishes the *pearl*, is almost confined to the tropical seas, and is most abundant in the Indian Ocean and its branches. In this zone almost exclusively, we find the *coral polypi*, so insignificant in themselves, but so remarkable for the size and extent of their stony structures. *The finest red coral*, however, which is used as an ornament, is chiefly obtained in the Mediterranean Sea, on the coasts of Italy and Barbary. The coral fishery is here very productive.

807. Among domestic animals, the ass and the mule are the most extensively used as *beasts of burden, in the countries of the Torrid Zone. In moist countries*, the elephant is trained and used for this purpose, especially in India, and is very valuable for its docility and sagacity. It is even taught to assist in unlading ships. Its tusks of ivory are sometimes six feet in length. In Asia, it is found as far as 30° of north latitude; in Africa, from the Cape of Good Hope, to 20° north latitude. *In the dry and desert regions* of Western Asia and Northern Africa, the dromedary is almost the only beast of burden. This animal, and the camel, are furnished with separate stomachs or cells, in which they carry a large quantity of water, and use it sparingly as necessity requires. They can thus supply themselves at a watering place for a journey even of fifteen days; and are enabled to traverse regions where other animals would perish with thirst The dromedary conveys all the goods which are transported across Northern Africa and Arabia.

808. In *South America* the lama, vicuna, and guanuco, are used for transporting goods over the Andes. They are much smaller than the camel; but they

are not less important among their native rocks and mountains, where scarcely any other animal can travel. The buffalo, or hunched ox, is also used as a beast of burden in *Africa and India*. In South Africa, the oxen are even used for riding, like horses; and are said to possess great activity and fierceness. The oxen of South America are derived from the European breed, and are chiefly used for food or killed for the sake of their skins. The *horse* is found in most countries of the Torrid Zone, but is less used than other beasts of burden. The milk and flesh of the camel, the ass, the buffalo, and the goat, afford the chief supply of *animal food* in this zone. But all species of animals are eaten by savage tribes.

WARM, TEMPERATE, AND COLD REGIONS.

809. In the *Warm, Temperate, and Cold Regions*, the animal tribes gradually diminish in number, magnitude, and ferocity. No land animals of these regions now existing, vie with the elephant in *size*. The wolf, the bear, and the lynx, are the principal *beasts of prey* in Europe; and in America, the wolf, the panther, and catamount, or cougar, and bear. The grisly bear of Missouri is an animal of uncommon ferocity and strength; and the brown bear of the Alps appears to resemble it. But with this exception the beasts of prey of these regions fall far short of the lion and the tiger in fierceness.

810. The tribes of *reptiles* gradually diminish in advancing towards the poles, until they disappear entirely in the Polar Regions. The number and venom of those which are poisonous, are also diminished. In the Warm Regions, *insects* continue very troublesome; but on advancing north, the frosts of winter check their multiplication, and they produce no serious inconvenience, except in the hottest season, or in marshy countries.

The *birds* of the Temperate Zone, are inferior in size and brilliancy to those of the Torrid Zone; but they surpass them in the sweetness of their note.

811. The deer, the hare, the rabbit, the squirrel, and the elk, abound in the *forests* of this zone, and furnish the chief sustenance of the savage tribes, and in newly settled countries. In the western part of America, the *bison*, or American ox, (usually, but improperly called the buffalo,) is the most valuable animal both for its flesh and skin. Vast herds wander over the plains between the Mississippi and the Rocky Mountains; but the number is diminishing.

The *beaver* is also a native of this zone. These animals are remarkable for their industry and ingenuity in building timber huts, and for their mode of living in families. They are much sought on account of their skins. Small numbers are still found between 30° and 60° of north latitude, especially in America. But they are generally extirpated, as a country becomes thickly settled. The martin, the otter, and several other *furred animals*, also occur in this zone. The elk is found from 52° to 64° in Europe, and from 45° to 52° in America, or chiefly within the Cold Regions.

812. The Temperate Zone seems to be the native region of the most useful *domestic animals;* the horse, the ox, the sheep, the ass, and the mule. The *horse* is found from Patagonia to Iceland and the Arctic Circle, but is most perfect in the centre of this zone. The Arabian horses are most remarkable for swiftness and fire. Those of the middle of the Temperate Zone, especially in middle Europe, are larger and stronger, and are considered the most useful. In Asia, the horse is not found beyond 64° of latitude. In the north of Europe, and in the islands of Scotland, there is a dwarfish race, often called the Shetland, or Welsh poney.

813. The *ox* attains the greatest degree of courage and power in the Warm Regions; as is evinced in the bull-fights of Spain. In climates which are moist and cold, such as Northern Germany and Ireland, the ox grows largest, and the cow yields milk most abundantly. In Iceland, the cattle thrive remarkably; and the ancient colony of Greenland exported butter and beef. In Tibet, and the neighboring table-land, is a peculiar species, called the *yak*, or grunting ox.

814. The *ass and mule* flourish best between 20° and 40°; and here they are often found large, handsome, lively, and docile. The mules of Spain are sometimes even preferred to horses. These animals do not endure severe cold; and in Europe, they are rarely seen beyond 52°. The wild ass of Tartary, which is esteemed delicious food, is not found beyond 48°.

815. In the dry regions of this zone in Turkey, and the south of Russia, Siberia, and Tartary, the *Bactrian camel*, with two humps, is as valuable as the dromedary of Africa. It is in use from the Black Sea to the Pacific, as far north as latitude 55°. It is said not to endure the heat of the Torrid Zone; and in China and India, it does not thrive south of 28° of latitude. *

FROZEN REGIONS.

816. *In the Frozen Regions*, we find so great a difference in the state of vegetation, that few animals of more temperate climates can subsist. The plains are covered with the reindeer, the sable, the ermine, and other animals protected from the cold by a rich covering of fur, which becomes an article of comfort and luxury to man. In approaching *nearer the pole*, both animal and vegetable life seem almost extinct. The *white bear* roams unmolested over these regions of frost, and frequently passes from one country to another on the floating ice. The *polar fox* advances still farther north.

817. But *the ocean*, from its milder temperature, supports a vast amount of animal life The polar seas swarm with herring and other small fish, which are of the utmost value to the inhabitants of these sterile regions. They also abound with *seals and sea otters*. The great *walrus*, or sea horse, is found in herds upon the ice; and the *whale*, the monarch of the ocean, makes this his chosen resort. The seal, the walrus, and the whale, are all invested with a thick coat of oil, which protects them from the cold, and serves the natives of these dark and frozen regions for light, and fuel, and food. The fur of the seal is also valuable, and the seal fisheries, (carried on chiefly for the skins,) employ great numbers of ships in the Greenland seas—around Cape Horn—and on the North West Coast of America.

The *birds* of this zone, and the neighboring region, assume a softer covering, and the down of the eider-duck, is an important article of commerce.

818. *At the extreme limits of the Cold Regions*, the ordinary *beasts of burden* of the Temperate Zone become small and stunted, or fail entirely for want of food. The reindeer and the dog are used in their stead. The *reindeer*, of all known quadrupeds, has its range nearest the pole. It is found on all the coasts of the Frozen Ocean. In Scandinavia, it can scarcely exist south of 65°. In Russia, it extends to 63°. In Asia, it descends as low as 50°; and among the Tunguses of Chinese Tartary, and in America, to a lower latitude. Within these limits only, it finds the moss adapted for its food. This animal not only serves as a beast of burden, but supplies the natives of these northern regions with most of their food, from its milk and flesh; while the skin furnishes much of their clothing; and the sinews, their thread.

VARIETIES IN ANIMALS.

819. Where the *same animals* are found *in various latitudes*, their character is often materially changed. The *dog*, at the equator and around the poles, changes his bark for a howl or murmur. In the Frozen Region, he assumes the shaggy appearance, and much of the ferocity of the wolf, to which, indeed, he is thought to be allied. The *sheep*, which is covered with the softest wool in the Cold Region, produces nothing finer than hair in the Equatorial Region. The *fox*, which is only hairy in warm countries, produces the softest fur in the Polar Regions; and the *bear* undergoes changes somewhat similar.

820. The *animals of different continents*, and often of particular portions of continents, are very different from each other. Indeed, Humboldt says, that no species is common to both continents; and that all which appear similar, have important points of difference. The cat, the dog, the horse, the ox, and the hog, were not natives of America, but brought from the Eastern Continent. The animals of New Holland are peculiar to that country.

821. Particular *differences* also exist *in animals of the same species*, in different regions, which are not attributable to climate or to any other known cause.

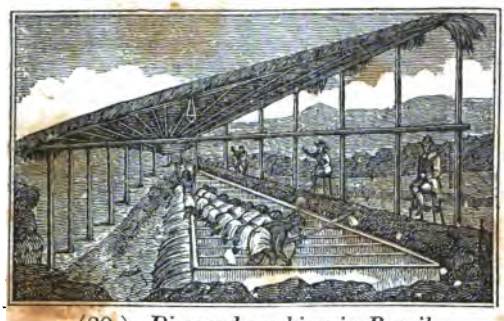
* Malte Brun

The goat of Tibet produces a fleece of a texture unknown in any other animal of the species. The seal and other animals of the Antarctic Regions differ entirely from those of the Arctic Regions. The *elephant* of India is different from that of Africa and the rhinoceros also. Varieties also occur in contiguous countries, of whose causes we are ignorant. The race of *swine* in Piedmont is universally black; and so generally in Italy, that swine's flesh is often called "*nero*," the Italian name for black. In Normandy, they are always white, and in Bavaria, reddish-brown. The hair of the swine of Normandy, is too soft to be used for brushes; and that of the domestic swine is universally different from that of the wild boar. Herds of swine, with solid hoofs, are found in Hungary and Sweden; although this animal is universally cloven-footed in other countries. *

The varieties of size, form, and color in *the ox, the horse, the sheep*, and especially *the dog*, are numberless, and many of them are hereditary which have originated within the memory of man. New varieties sometimes arise at the present day, such as the otter-breed of sheep in New-England, and may be propagated by sufficient care.

These varieties are most numerous in domestic animals, and occur more frequently in proportion as the animal is farther removed from its natural conditions and habits, and food.

(II.) MINERALS.



(30.) *Diamond-washing in Brazil.*

822. *Minerals* are not *distributed* on the earth according to climates, like animals and vegetables. But by the kindness of Providence, those which are most necessary to man are found in almost all countries; and others are more or less abundant, according to their importance. It is remarkable also, that the most barren portions of the earth are the most fruitful in mineral treasures.

823. The *metals* are sometimes found pure, but they are generally mixed with other minerals, in a stony substance termed *ore*. They are found occasionally in beds, or large masses, but usually in veins, passing through other rocks. The *veins* vary in width, from a few inches to many feet. Sometimes they extend many miles in length, varying in breadth in different parts. Their depth is often very great, and it is doubtful whether the bottom of veins has ever been found; but they are often neglected, because the ore is too poor, or the digging too expensive. Coal, salt, and iron, are frequently found in *beds* of great extent, but usually of no great depth.

824. In digging an excavation, or *mine*, to procure any of these minerals, the course of the vein or bed is usually followed, and the size of the mine is proportioned to its size and extent. The largest excavations are those of salt mines, some of which are several miles in extent. The deepest mine in Europe is at Fruttenburgh, in Bohemia, which is 3,000 feet in depth.

* Prichard on Man.

825. Some minerals are found *upon the surface* of the earth, mingled with its soil or sand; as is commonly the fact with gold and the precious stones. In this case, the mineral is procured by washing the sands, as represented in the engraving, (No. 39.)

METALS.

826. GOLD is the most precious of the metals, and is usually found in grains, or gold dust, in a pure state. Nearly three-fourths of the gold of commerce is obtained by washing the sands of rivers and alluvions, and it is most abundant in countries near the Equator.

Gold is found in most parts of *Europe*, but nowhere in large quantities The sands of the Danube—the Rhine—the Rhone—the Garonne—the Tagus, and many other rivers, contain small quantities. The chief mines of importance are at Kremnitz, in Austria, which produce more than all the rest of Europe. Mines have recently been discovered in the Ural Mountains.

Africa furnishes large quantities of gold, which are washed down by the rivers. It is especially abundant on the Niger—in Western Africa—and on the coast of Zanguebar; and forms an important article of commerce. *Japan* also, and the *East India Islands*, particularly Sumatra, Borneo, and Celebez, produce gold for commerce.

But *Mexico and South America* produce gold in far greater abundance than any other countries on the globe. The whole amount is 11 millions of dollars annually. A single mine furnishes more than all Europe. It is found at the foot of the Andes, almost throughout their whole extent, sometimes embraced in veins of primary or secondary rocks. Brazil produces large quantities—chiefly from alluvial sands.

In the *United States*, gold was discovered long since in Cabarras County, in North Carolina. It has since been found in considerable abundance, throughout the whole region between the Allegany Mountains and the alluvion of the coast, from Virginia, to Georgia and Alabama. During the year 1830, the Mint of the United States received Gold to the amount of 466,000 dollars, and in 1834, of about 900,000 dollars, from this region.

827. PLATINA is a grayish metal, more rare, and on some accounts, more valuable than gold, and is usually found in connection with it. It occurs in several gold washings of South America, and has also been discovered in St. Domingo—and in the Ural Mountains so abundantly, that it is now coined into money. Too little has been obtained to render it an important article of commerce.

828. SILVER, as well as gold, is found in unequalled abundance in *Mexico and South America*, particularly among the Andes. Mexico yields about 22 millions of dollars, and Peru, Chili, and Buenos Ayres, 10 millions annually. It is usually found in ores; but frequently pure, and in large masses. The first mines were discovered at Potosi, by an Indian, who tore up a bush in ascending the mountain, and found a mass of silver beneath it. Huantaya in Peru, and Guanaxato in Mexico, contain some of the most productive mines. The latter has a vein of silver ore 180 feet wide, and 1,600 feet deep.

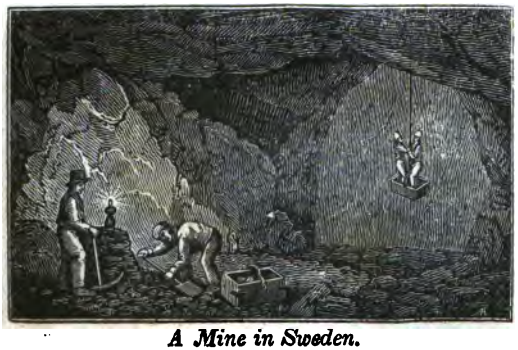
The quantity of silver found in *other parts of the world*, is comparatively insignificant. Schemitz and Kremnitz, in Hungary, are the principal mines in Europe. Those of Kongsberg, in Norway, have furnished very large masses of pure silver. It is also found in Saxony, and other parts of Europe—and at Kolhyvane, in Siberia. In the *United States* it has only been discovered in small quantities, at Huntington, (Conn.) Phillipsburgh, (N. York,) and Portsmouth, (N. H.)

829. IRON is the most useful of all the metals; and agreeably to the general order of Providence, the most extensively diffused. Its ores are found abundantly in all countries, and in every formation. It has been discovered more extensively in the northern, than in the equatorial regions. The principal ores are the magnetic ore, and iron-stone, of mountainous regions; and the bog-iron and iron-earth, of alluvial districts.

Great Britain and France contain *the most extensive mines* in the world. *Sweden* has large mines of magnetic ore, which produces the best of bar-iron. The mine of Danemora, is particularly celebrated. At Gellivara, in Swedish Lapland

Gold Mines of North Carolina.

Lead Mines.



A Mine in Sweden.

Frankfort, (Kentucky.)

Coal Mines of Pennsylvania.

Most of the coal mines of Pennsylvania are in the sides of hills, or open to the air. The coal is carried away in cars, rolling on timbers covered with iron, which are called railways.

Salt Mines of Cracow.

is a mountain of ore three miles in length. Norway, Russia, Spain, Germany, and Austria, have extensive iron mines also. The island of Elba contains one of the most ancient known, remarkable for the beautiful play of colors on the ore.

In the *United States*, there are numerous and inexhaustible beds of iron ore—particularly along the Allegany or Apalachian Mountains, from Franconia, in New-Hampshire, to Georgia. Twelve mines are now open in Virginia. Kentucky, Tennessee, and Ohio, also abound in iron. *New-York*, *New-Jersey*, *and Pennsylvania*, produce ore in abundance, of a quality not exceeded in Sweden. New-Jersey, besides the iron-stone in the north, has extensive beds of bog-ore on the coast, which are renewed in some years after they have been once exhausted. Similar beds occur in other parts of the alluvial coast, south of New-Jersey; but they are not extensively wrought.

In *Connecticut*, important mines are wrought at Salisbury, and at other places in Litchfield County. *Massachusetts* has a number of mines; and the Green Mountains of *Vermont* contain numerous beds of ore.

830. COPPER ranks next to iron in utility; and though less abundant, occurs in many regions of the globe. It is often found in pure metallic masses, sometimes very large. On lake Superior, where it abounds, a single mass on the Onontagon River, is estimated to exceed a ton in weight.

England has *the most extensive mines* of copper known, particularly in Cornwall; and produces somewhat more than all the rest of Europe.

Considerable mines are also wrought in the middle and north of *Europe*—among the Ural Mountains—and in Siberia. Greenland, Iceland, Tartary, and Japan, also furnish copper; as well as Barbary, Southern Africa, and the southern part of South America.

Copper ore is found in many parts of the *United States;* but no mines are now wrought. That of Bellville, near Newark, (N. J.) was formerly productive.

ZINC, the metal which is combined with copper, to form brass, is found in many countries, in considerable abundance.

831. LEAD is found more or less in all countries. It is said to be rare, however, in the Ural Mountains, and in Peru, although other metals are abundant.

It is found *in the greatest quantities* in Great Britain, and especially in England, and the Lead Hills of Scotland. The mines of the rest of Europe, chiefly found in Germany, France, and Spain, produce less than those of Great Britain alone.

The United States contain several extensive beds of lead ore. The mine at Southampton, Mass. is the principal one east of the Mississippi. Lead is found, however, on the Schuylkill River—on the Great Kenhaway—at Middletown, (Conn.)—and in most of the states comprised in the primary and secondary regions.

The lead mines of Missouri, lying near the Mississippi River, are among the richest in the world. The ore is found abundantly within two feet of the surface, in detached masses, weighing from 1 to 1800 pounds. The annual produce is estimated at three millions of pounds.

The *Lead Mines of Illinois*, have been wrought until recently by the Indians, who sold the ore to the whites; and produced 30,000 or 40,000 pounds annually.

832. TIN is found in few countries in the world. The *principal mines* of Europe are in Cornwall, in England. They are very extensive and ancient, and have supplied most of the tin of commerce, from the time of the Phenicians.

The Saxon Mountains, and Gallicia, in Spain, also produce tin. It exists in Mexico and Chili, but not in any quantity; and has not been discovered in the United States. The Island of Banca, in the East Indies, contains large quantities of the ore; and it is found in India, Malacca, Sumatra, and Japan.

833. MERCURY, or quicksilver, is also a rare metal. The principal mines known are those of Almaden, near Cordova, in Spain—Deuxponts, in Germany, —Idria, in Austria—and Guanca Velica, in Peru. It is found in Mexico and New-Grenada. Small quantities, in the form of black and red sand, have been found in the United States, on the shores of Lake Michigan, Huron, St. Clair, and Erie, as far as the mouth of Vermillion River.

834. COBALT, which is chiefly used for giving a blue color to glass and porcelain, is obtained almost entirely from Germany. A mine has been disco-
wrought in Chatham, near Middletown, (Conn.)

835. ARSENIC is a metal found in most of the mining countries of Europe; but is chiefly procured from Germany and the countries on the Mediterranean Sea. Some of its ores form brilliant colors for the painter.

836. ANTIMONY and BISMUTH are brittle metals; which are combined with lead to form the metal for printing types. They are not common; and are obtained in commerce from the mines in Europe, particularly of Germany.

There are several other metals less common and important, of which the principal are Manganese, Nickel, Tungsten, Molybdenum, and Chromium.

PRECIOUS STONES.

837. The PRECIOUS STONES are among the rarest of minerals. The finest *Sapphires* and *Rubies* come from the Burman Empire and Ceylon. The ruby has also been found in France, Bohemia and Siberia; but is rare in other parts of the world. The finest *Emeralds* have been obtained from Peru, and the neighboring districts of New-Grenada. The emerald is also found in Ceylon, Egypt, and Ethiopia. It has been discovered in the United States; and the *Beryl*, an inferior species of emerald, occurs in many parts of our country.

The *Topaz* is chiefly obtained from Siberia, the Ural Mountains, Bohemia, Saxony, England and Scotland. The finest is found in Brazil. The *Opal* is a beautiful stone, obtained chiefly from Hungary.

Jasper, Chalcedony and its varieties *Cornelian, Onyx, and Agate*, are the most abundant of the stones termed precious; and are found more or less in almost every country. Egypt, the East Indies, Germany and Scotland appear to furnish the most beautiful. The *Amethyst* is also found in considerable abundance

838. The DIAMOND is obtained almost exclusively from India, Brazil and Borneo. It always occurs in alluvial beds, and is obtained by washing the earth. In Hindoostan, it is found from Cape Comorin to Bengal, but chiefly in the provinces of Golconda and Visiapour. The most valuable mine is on the Kristnah River. In that of Raolconda, 600,000 persons are employed. The diamonds of Brazil are chiefly found in the provinces of Minas, Geraes, in beds of gravel and sand, from which they are washed by slaves.

BUILDING STONES.

839. The important uses of LIMESTONE, or carbonate of lime, are well known. It is one of the most abundant minerals on the surface of the earth, occurring in primary, transition, secondary and alluvial regions, and assuming a great variety of forms. It constitutes the chief part of the secondary rocks, in the form of chalk, common limestone, marble, and calcareous spar; and it is also the substance of which the coral reefs and islands are composed.

840. MARBLE is found in almost all countries of much extent—generally *white* in primary regions—and colored, in secondary. The primitive marble of the island of Paros, and of Carara, in Italy, are most celebrated for their fine grain and dazzling whiteness. Egypt, Italy, Spain, France, and the British Isles, abound in beautiful marbles, of every color, and often variegated with clouds, veins, and spots.

In the *United States*, a range of limestone extends along the edge of the secondary region, through the western parts of Vermont, Massachusetts, and Connecticut; and quarries of marble are wrought at several places. Some produce fine white marble; as those of Pittsfield and Washington. The Middlebury marble is beautifully clouded. Pursuing the same direction along the Blue Ridge, we find other beds of marble—at Kingsbridge, (N. Y.)—and in Montgomery and Lancaster Counties, (Penn.) most of which are primitive.

At *Milford*, near New-Haven, (Conn.) there are quarries of yellow, and also of green variegated marble of uncommon beauty—the last resembling the celebrated verd-antique.

On the Potomac River, in Maryland, there are extensive beds of a secondary brecoia marble, which is finely diversified with imbedded pebbles and fragments of various sizes and colors. The columns of the capital at Washington are composed of this marble.

841. CHALK is another variety of carbonate of lime. It has never been observed in America, Asia, Africa, or the south of Europe. It is the most abundant rock in the north of France; and extends through the Netherlands to England. Here it forms the white cliffs of Dover; and occurs in extensive beds, in other

districts. It is also found in Ireland—Denmark—on the southern shores of the Baltic—and in Poland and the south of Russia. It is in beds of chalk that *flint* is usually found.

842. SLATE, suitable for roofs, is a common mineral, and is found in various parts of the United States. The best occurs in York, Lancaster and Wayne counties, (Penn.) in Ulster and Dutchess counties, (N. Y.) and at Brattleborough and Dummerston, (Ver.) On the Kennebec River, in Maine, it may be obtained in tables, ten feet square.

843. SANDSTONE, commonly called Free Stone, is found, and used in building, in every part of the world. In the *United States* the principal quarries are in various places from New-Haven to Middletown, (Conn.) and along Connecticut River, 100 miles in extent—in the neighborhood of Newark, (N. Jersey,)—and on the Potomac River. The quarries at Newark and Middletown furnish some of the best in use, and large quantities are exported to other states. The sandstone of the Potomac, of which the capitol at Washington is built, is white and very fine; but it is less durable than that of many other quarries.

It is *in connection with secondary limestone, slate and sandstone*, that we usually find the inflammable minerals and salts. Coal, sulphur, salt, and bitumen, are generally associated together, and gypsum often accompanies them.

GRANITE, which is now extensively used as a building stone, is found, as well as *gneiss* in almost every primitive country. (*See* § 155.)

INFLAMMABLE MINERALS.

844. COAL is found more or less abundantly in most secondary countries; but it is less common in primitive regions, whose rugged character prevents the destruction of the forests, and renders coal unnecessary for fuel.

England is remarkable for its coal mines. The principal are at New-Castle, on the eastern side of the island, and Whitehaven on the western. Coal is also abundant in some parts of Scotland—in France, and Germany—and in China.

It abounds in *South America*, even at a great height on the Andes. In *North America*, Cape Breton and New-Brunswick, and many parts of the United States, produce coal. One of the most extensive mines of bituminous coal in the United States, is near *Richmond*, (Virg.) in a bed 20 miles in length.

In *Pennsylvania*, the coal beds are said to extend over one third of the surface. *Beds of anthracite*, or stone coal without bitumen, of excellent quality, are found along the Susquehannah River, at Reading, and thence to the sources of the Schuylkill and Lehigh. Great quantities are now exported to all parts of the United States. *Beds of bituminous coal* extend from the mouth of the Juniata River, through all the country watered by the Susquehannah, to Pittsburgh. From this place they continue down the Ohio to Missouri; and along the valley of the Mississippi to the heads of the River Tombigbee.

There are also *indications of coal beds*, in the secondary region extending from New-Haven to Middletown, (Conn.) and thence to Northampton. Rhode Island has a mine of anthracite; and there is another near Worcester. (Mass.)

845. PEAT or TURF is found in most alluvial countries; and is a valuable substitute for coal. It is almost the only fuel in some parts of Ireland and Holland. It is found in New-Jersey, and many other alluvial districts in the United States; and in some places is extensively used.

846. SULPHUR is usually found in secondary formations, in connection with salt, gypsum, and marle, or calcareous clay. It occurs thus in Switzerland, Sicily, and Poland; and at most places where salt mines or salt springs exist.

It is frequently *deposited* in considerable quantities from sulphureous springs; as at Ritchfield, in New-York. In Siberia, it is collected from springs for the purposes of trade.

Sulphur is *most abundant* in volcanic countries; and seems to be an important part of the fuel which supports their fires. Sicily and Iceland abound with it. It is always exhaled from the earth in the neighborhood of volcanoes, especially in the craters of those which have become extinct, like the Solfa Terra of Naples. A large part of the sulphur of commerce in Europe, is procured from dormant volcanoes. In Iceland it is found in large masses near the surface of the soil. In the West India Islands of Gaudaloupe, Martinique, and Montserrat, which appear to be volcanic, it is exhaled from the earth in some places.

847. BITUMEN is an inflammable mineral, which occurs both solid and fluid. When purest, it is in the form of a whitish, transparent fluid, called *naphtha*. When impure, or altered by the air, it becomes dark colored, and oily, and is called *petroleum*, or mineral oil. It is used in place of oil for lamps; and also for medical purposes. This fluid becomes by exposure as thick as tar, and is called *maltha;* and finally is converted into the hard, brittle substance, called *asphaltum*.

Baku, near the Caspian Sea, in latitude 42°, is most remarkable for its bituminous springs. For an extent of several miles the soil abounds with naphtha and petroleum; so that wells dug in the sand, are filled with it, and yield a large quantity daily. The vapor is constantly rising from the ground. At two or three inches below the surface, it will instantly take fire from a coal or lamp, and burns until it is extinguished. By inserting hollow canes into the ground it is made to burn from the top, and is used by the inhabitants for fuel and light. The petroleum is also mingled with sand for fuel. This region is the chief sacred place of the Guebres, or worshippers of fire, who keep the flame continually burning. Naphtha is used by the Russians as a cordial, but never intoxicates. The springs often rise in the beds of streams.

Petroleum is also found in Modena and Parma in *Italy*, and used for lamps. It occurs in many other parts of Europe. Near Rangoon, in *Burmah*, it is so abundant, that the springs are supposed to furnish 100,000 hogsheads annually for commerce.

Springs of petroleum are found in the *United States*, near Green River, (Ken.) in the western parts of Pennsylvania—in Ohio, and in other places throughout the secondary region. It is often found in connection with salt. At Oil Creek (Penn.) and at Seneca Lake, (N. Y.) it is seen floating on the surface of springs, in considerable quantities.

Maltha is found in Barbadoes, and is called Barbadoes tar.

Asphaltum is found floating on the waters of the Dead Sea, in Syria, in considerable quantities. In the island of Trinidad, the celebrated Pitch Lake is covered with a crust of it, on which it is said a person may walk.

848. AMBER is a resinous substance of a beautiful color, often made into ornaments. It occurs frequently in alluvial districts; and is found in those of the United States. But as an article of commerce, it is obtained almost entirely from the alluvions on the shores of the Baltic, in Prussia and Poland.

MINERAL SALTS.

849. SALT is a mineral of the first importance to man, and is found in great abundance in every part of the globe. The *ocean* is an inexhaustible mine of salt, from which it is continually formed, in hot countries, by the heat of the sun, and in cold countries, by means of artificial heat. The Cape Verd and Turks Islands furnish large quantities, produced by the heat of the sun.

Salt is also found in extensive beds, *in secondary regions*. In Cheshire county, in England, is a bed from 60 to 90 feet thick, which furnishes what we term Liverpool salt. *In Germany, Hungary, and Poland*, there are numerous beds, particularly along the foot of the Carpathian Mountains, from the Black Sea to the Alps. The celebrated salt mines of Wielitzka, near Cracow, are probably the most extensive in the world.

Rock Salt sometimes forms *mountains*, as at Cardona, near Montserrat in Spain, (§ 178.) In Moldavia in Turkey, is a mountain of salt also; and in Hindoostan is a chain of hills entirely composed of salt, which extends across the Indus through Cabul.

Extensive plains, several miles in length, are sometimes found incrusted with salt. Many such occur in Northern Africa and the Sahara, Abyssinia, Persia, Siberia, and Tartary, which form important mines of salt. In *South America*, salt is found in great quantities in the Desert of Atacama. On the plains between the Andes and the Paraguay River, it is so abundant, that there is scarcely a lake, stream, or well, which is not brackish.

The Great Desert of *North America* is also incrusted with salt in many places; and its waters are generally brackish in the dry season. In many parts of the Western United States, there are spots of ground so impregnated with salt, that wild animals resort to them, and lick the surface. This has given them the name of *salt-licks*.

Brine-springs are often found rising from beds of salt, so strongly impregnated with salt that it is obtained for use, by evaporating their waters.

They are numerous in secondary regions, in all countries. England, and the middle countries of *Europe*, as well as the secondary districts of the *United States*, contain many. They abound particularly on the Ohio River and its branches, in Ohio—Illinois—Kentucky—Tennessee—and Virginia, and near the small lakes of New-York. The most extensive salt works are at Salina, in New-York, and on the Great Kenhaway River, in Virginia. Large quantities of salt are also made from sea-water, on the coast of Massachusetts.

850. GYPSUM, or plaster of Paris, a mineral which is very valuable in improving land, is often found in connection with salt. It is found in great abundance near Paris, from which it took its name. Considerable quantities were formerly brought to the United States from France; and from numerous quarries in Nova Scotia and New Brunswick. Within a few years, extensive quarries have been discovered and wrought in Onondago and Madison Counties, in New-York. It is said to have been discovered also, on the Holston River, in Virginia and Tennessee.

851. Other salts, such as Glauber and Epsom Salts, Ammonia, Nitre and Soda, which are manufactured in large quantities for commerce, are also found as minerals.

Ammonia, or Volatile Salt, is found most frequently in the neighborhood of volcanoes; as in Iceland—Naples—Sicily—and the Lipari Isles. Large quantities are obtained near two volcanoes in Central Tartary; and in Persia and Egypt, it is found mixed with clay.

Glauber Salts are found on the banks, and in the waters of many salt lakes, in Siberia—Egypt—and other countries.

Epsom Salts are found in the springs of Epsom, in England, and some others; and in a cave in Illinois, (¶ 332.)

Borax, a salt used in soldering metals, is found in lakes and caverns in Tibet, Persia, Tartary and Hungary.

Copperas and Alum are manufactured from certain mineral beds, which are thence called alum or copperas beds; and they are sometimes found already formed, as in Missouri, Vermont, and some other parts of the United States.

852. *Soda*, or Natron, is obtained in large quantities from the ashes of marine plants, chiefly in Spain, Portugal, and other countries on the Mediterranean, and is there called *barilla*. But it is abundant as a mineral, in the Natron Lakes of Egypt and Hungary; and it is found in India, Asia Minor, Siberia and Russia. It is also found in several lakes in Mexico; and is very abundant in a lake in New Grenada. In La Plata, it occurs in considerable beds.

853. NITRE occurs in great quantities in many of the plains of Spain, Hungary, and Russia. It is abundant in some of the deserts of Persia, Arabia, and Africa. It is also found in large quantities in the earth of calcareous caves, in India, Java, Naples, and the secondary region of the United States. Kentucky and Tennessee have numerous caves of this kind, from the earth of which a considerable amount is manufactured.

(II.) MINERAL SPRINGS.

(31.) *Great Geyser of Iceland.*

854. Springs are the sources of water, from which the rivers and streams of the globe are supplied. Many are distinguished by peculiar variations in their height and are called *intermitting springs*. They often have regular periods of rise and fall, without any visible cause. The periodical fountain of Como, described by Pliny, rises and falls every hour. At Colmar, in France, is one which rises and falls eight times in an hour. Other springs are found, which rise and fall with the tide, although they are often at a great distance from the sea. The tide-springs of Languedoc in France, Torbay and Buxton in England, and Gallicia in Spain, are among the most remarkable.

855. The water of springs sometimes rises in a jet or fountain.

The most remarkable examples of this kind, are the *Geysers*, or spouting springs of Iceland, which vary in their heat from that of the air, to the boiling point. They throw out jets of water at irregular intervals, with a noise like that of cannon, and produce a trembling in the adjacent ground. The height varies according to the season, but it is commonly from 90 to 100 feet, and is said sometimes to exceed 200. The force is so great, that heavy stones, thrown into the basin, are instantly thrown up with the column, to a great height; and the fountain may often be excited to action in this manner.

The Great Geyser rises from a basin forty or fifty feet in circumference, situated on a small mound, which was formed by the deposites from the spring; as exhibited in the engraving, (No. 31.)

856. There are numerous springs on the globe which are warm or hot, and others which are impregnated with various mineral substances, which give them medicinal properties. These are termed *mineral springs;* and are found with every variety of qualities. Some are useful merely on account of the heat of their waters. Some are employed only for bathing, and others are taken internally.

Mineral springs often contain substances, which cannot be combined in the same proportions by any artificial means. It is *remarkable* also, that they do not change their qualities from age to age, except as they vary for a short period, from the effects of rain and drought. Many known in the time of the Romans, are still noticed for the same properties, and are useful in the same diseases as at that period. *Earthquakes* have the most sensible and sudden effects upon them. One of the springs of Carlsbad, in Bohemia, lost its heat in an earthquake; and a similar change took place in the waters of Buda and Toeplitz, in Hungary, and in some others, during the great earthquake of 1755.

857. *The principal classes of springs* are the *hot and warm springs*—the *sulphureous*, containing sulphur, or sulphureous gas—the *chalybeate*, or those containing iron—the *saline*, impregnated with various salts—and the *aerated*, which sparkle like fermented liquors from the fixed air, or carbonic acid gas they contain. Many springs have several of these qualities united. Indeed it is not uncommon to find a watering-place, in which three or four varieties occur at a short distance from each other, as in the springs of Ballston and Saratoga, in the United States.

858. It is stated by a distinguished mineralogist,* that the *mineral springs of primitive regions* are almost always warm, and often have a high temperature. Some of these rise from beneath the granite, and other primitive rocks. The principal substances found in them are sulphuretted hydrogen, or sulphureous gas; carbonic acid gas, or fixed air; soda, lime, and a little iron. In those which are found *in secondary regions*, carbonic acid is more rare; and lime and saline substances are the prevailing ingredients. Those of *alluvial regions*, are usually cold; and the principal minerals dissolved are carbonate and sulphate of lime, sulphate or magnesia, and iron.

859. Many of the *hot and warm springs* are impregnated with mineral substances, and indeed few of them are pure. Their usefulness is frequently derived in a great measure from their heat, and they are much employed in rheumatism, gout, and other diseases of a chronic nature.

860. *Volcanic countries* usually abound with these springs. The boiling springs of *Iceland*, have already been mentioned. Naples has several in its neighborhood, and they are generally abundant in *Italy*. The baths of Pisa and Lucca are celebrated. *Mexico* abounds in hot springs from its volcanic charac-

* Brogniart.

rers; and they are particularly numerous in a tract of 40 square leagues, north of Valladolid. On the plain of Jorullo is a hot sulphureous spring, which supplies a brook 24 feet wide. The hot wells in the province of Guanaxuato, have a temperature of more than 200° of Fahrenheit.

861. In *England*, Bath contains the most remarkable hot springs, forming five baths, from 93 to 117 degrees of temperature. They are found very efficacious, and are resorted to from all parts of the kingdom. At the hot wells of Bristol, the spring issues from a cliff on the bank of the Avon, with a temperature of 70 or 72 degrees. Buxton and Matlock, in Derbyshire, are also noted for warm baths.

862. Warm springs are numerous *in the middle or south of Europe*. *France* has a number, of which Barreges and Bagneries are most frequented. Barreges contains saline and sulphureous, as well as hot springs, from 73 to 120 degrees of temperature. At Bagneries, there are 32 springs, formerly known to the Romans—from 80 to 123 degrees of temperature. The springs of Aix, in Savoy, are also much esteemed.

In Germany, *Aix la Chapelle*, near the borders of the Netherlands, in the Prussian dominions, has five hot springs, used in bathing, the most celebrated and most frequented in Europe. The hot baths of *Baden*, in the Duchy of this name, and of Baden, in Austria, are also celebrated.

Bohemia and Hungary have a number of warm springs. *Carlsbad*, in Bohemia, contains several, discovered by Charles IV. from which the town received its name. *Toeplitz* is one of the principal watering-places in Germany. The name, signifying 'warm springs,' is applied to several villages, like the German *bad* or *baden*, which signifies 'bath.'

In Switzerland, there are valuable warm baths at Leuk, on the right bank of the Rhone. The waters are derived from five springs, issuing from the base of the mountain, the hottest of which is at 115° of Fahrenheit.

Spain and Portugal have numerous warm springs, which are called *caldas*. They are found in Spain at Alicant—and in Murcia, Grenada, &c. Those of Almeria, in Grenada, are the most noted.

863. *Around the Black Sea*, there are numerous warm springs. At Bursa, in Asia Minor, at the foot of Mount Olympus, there are celebrated warm baths. The water is scalding as it issues from the springs. There are a number in different parts of the city; and hot and cold springs, in several instances, issue very near each other. On the east of the Black Sea, *Teflis* is remarkable for the warm sulphureous baths, from which it derives its name and its existence.

864. *Sulphureous springs* are frequently found, containing a sulphureous gas termed sulphuretted hydrogen, which renders the taste and odor offensive. Sulphur is often deposited on the borders of the spring, or in the channels through which it flows. They are particularly useful in eruptions and disorders of the skin. Those of Harrowgate, in *England*, are much frequented. Many of the warm springs, which have been mentioned, are sulphureous also.

865. *Chalybeate springs*, or those which contain iron, are found abundantly in every country, in consequence of the general diffusion of this metal on the earth. They are useful particularly in diseases of debility and indigestion, and in bilious complaints.

Spa is a celebrated watering place in the Netherlands, well known to the Romans, from which the name *Spa* has been used as a general appellation for mineral springs. It has six or seven chalybeate springs, which issue from a hill near the town. The waters are exhilarating, and pleasant to the taste. At *Pyrmont*, in Hanover, there is another valuable chalybeate spring, highly impregnated with carbonic acid gas. *Tunbridge Wells* contains the most celebrated chalybeate springs in England, and is a place of great resort. *Brighton* also has chalybeate waters of much value.

866. Among the *saline* medicinal springs of Europe, those of Cheltenham and Epsom, in England, are among the most remarkable. They are purgative in their quality. *Selters*, in Germany, is well known throughout Europe for its ærated saline waters, commonly called Seltzer, and has given name to the artificial waters of this kind. Great quantities are exported to other countries.

Many of the saline and chalybeate springs already mentioned, are impregnated with carbonic acid gas, and thus rendered very exhilarating and more medicinal.

867. The *United States* have numerous and valuable mineral springs, of various qualities. The whole secondary region belonging to the *basin of the Mississippi*, abounds in sulphureous and saline springs, which have not been fully examined or described; and in almost every state, some are found which are valued for their medicinal properties.

In the Atlantic States, the most noted sulphureous springs are those of Bedford and York, in Pennsylvania—Ontario County and Ballston, in New York—Stafford, in Connecticut—Pacolet Springs, in South Carolina—and those of the Allegany Ridge, in Virginia.

868. On the Arkansaw River, there are *warm springs*, said to have a temperature of 180 to 190 degrees. They have long been resorted to by the Indians for the cure of diseases. Buncombe County, in North Carolina, also contains warm springs, which are much visited.

869. In *Virginia*, are the Warm and Hot Springs of the county of Bath. The *Warm Spring* issues with a very bold stream, sufficient to turn a mill, and keeps the water in its basin 30 feet in diameter, at the vital warmth of 96 degrees. The *Hot Spring*, about six miles distant, has a temperature of 106 to 108 degrees of Fahrenheit. In the adjoining county of Monroe are the *Sweet Springs*, which rise at the foot of a large mountain. They are usually considered as more medicinal than any others in Virginia, especially for drinking. They are very copious, so that a saw-mill can be turned by them at the distance of 200 yards from their source. The taste is slightly acid; and hence they were absurdly called *sweet*. The temperature is 72 degrees of Fahrenheit.

870. At *New-Lebanon*, 27 miles S. E. of Albany, is a warm spring, which has a moderate degree of heat. The mineral impregnation is very slight, but it has frequently proved a valuable remedy for diseases.

871. *Chalybeate springs* are so numerous in all parts of the United States, that a particular description is impracticable. *The most celebrated in the northern states* are those of Ballston and Saratoga, in New-York—Schooley's Mountain, in New Jersey—Stafford, in Connecticut—and the Red Springs, near the Sweet Springs, of Virginia. A spring recently discovered at Orange, near Newark, in New-Jersey, has begun to be a place of resort from the city of New-York. Another was recently discovered at Shrewsbury, in Massachusetts. All these springs, except those of Ballston and Saratoga, are simple chalybeates, with very little carbonic acid gas.

872. *Ballston and Saratoga* are remarkable for the number and variety of their mineral springs, which are probably not surpassed in efficacy by any in the world. Their waters are bottled, and exported to distant states, and even to Europe, in considerable quantities.

Ballston, is chiefly distinguished for its chalybeate springs, highly impregnated, and sparkling with carbonic acid gas. Besides these, it has a saline and sulphureous spring, of less value.

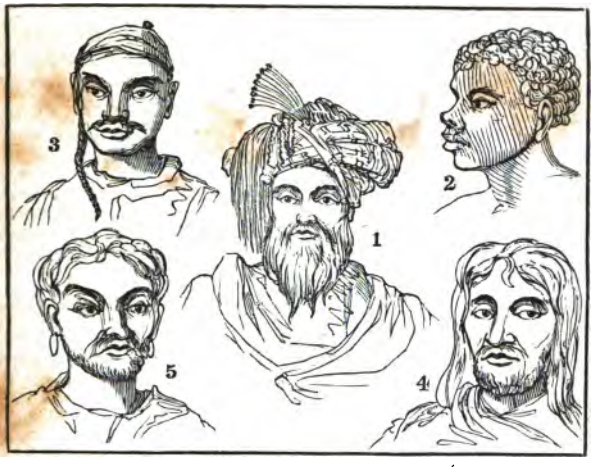
Saratoga is particularly celebrated for its saline springs, of a purgative quality, impregnated with carbonic acid gas. The Congress Spring is the principal; but there are several others of a similar kind. There are also several chalybeate springs, little inferior to those of Ballston in pleasantness or efficacy. *The Olympian Springs*, in Kentucky, have a similar variety of waters in the space of half a mile.

A remarkably fine spring of aerated water was found at the foot of James' Peak, among the Rocky Mountains, by the party of Major Long.

873. The celebrity of many of the mineral springs described, has given rise to considerable villages, like Ballston and Saratoga, in the United States; or even large cities, like Spa, in Germany, and Bath, in England, which are entirely supported by them. Instead of being visited by invalids only, they have become fashionable resorts, distinguished by a continued round of gayety and amusements during the season for using the waters

CIVIL GEOGRAPHY.

RACES OF MEN.



(2.) 1. *European.*—2. *African.*—3. *Asiatic, or Mongolian.*—4. *American.*—5. *Malay.*

874. *The Scriptures inform us* that the human family originated from a single pair. In the animal and vegetable world, we find almost numberless varieties of form and color in the same species, some of which have no visible cause. The children of a single parent often have striking peculiarities which they communicate to their descendants. We should not be surprised, therefore, to find great varieties in the millions of the great family of man, exposed to such varieties of climate, manners, and modes of living.

Some of the numerous variations of complexion and constitution may be ascribed to climate; and other peculiarities, like the fine form of the American Indians, or the flat heads of the tribes among the Rocky Mountains, originate from the treatment of infants. But there are still other varieties of form, and feature, and color, which, like those of the horse and the dog, are probably owing to causes beyond the reach of our investigations.

There are five *principal divisions or races of the human family*, distinguished by their features and color; the European—Asiatic, or Mongolian—American—Malay—and African.

875. The EUROPEAN RACE, to which we belong, is distinguished from all the rest by a naturalcomplexion of white, mingled with red. It is found in infants of this race, and persons not exposed to the sun and air, in all climates. They have usually straight hair, an oval face, an expanded forehead, a rounded, full chin, and generally the most regular and beautiful features.

876. *This race includes* almost all the Europeans, with their descendants, who are settled in America, and other portions of the world. It also embraces the nations of Western Asia, as far as the river Oby, the Belur Tag, and the Himmaleh Mountains, with the people of Barbary, Egypt, and Abyssinia, and the Moors of Northern Africa.

The Georgians and Circassians are the most beautiful exemples of this race, and it is said to be rare to see an ugly countenance among them. The Turks and Persians often buy their wives from these nations, and the Persians especially partake of their beauty.

877. Most nations of the European race are of the *Celtic family*. They have dark hair, dark eyes, and a complexion inclining to brown, which is usually darker as the climate is warmer. The nations in the south of Europe are swarthy. The Arabs, Abyssinians, and the people of Northern Africa, belonging to this race, have an olive complexion. The face is thin, especially in warm countries; the nose prominent, and the form tall and slender.

878. In the middle of Europe is found a branch of this race, called the *Teutonic or Gothic family*, which includes the Germans, Hollanders, Danes, Swedes, Norwegians, Icelanders, and Lowland Scotch. These nations are usually marked by a fair and red skin, light or sandy hair, and blue or gray eyes. The face is generally broader, and the form stouter than in other nations of the European race. The English are descended from a mixture of the Celtic and Gothic families, and combine the characteristics of both.

879. *The whites of America* are descended from emigrants of several of the nations of Europe, and resemble, in appearance, those from which they are derived. In the Southern United States, the complexion is sallow; in the warm countries of America, it is generally swarthy. Even in the northern and colder countries of the Western Continent, the complexion is not usually so fair as in the north of Europe.

880. THE ASIATIC, OR MONGOLIAN RACE includes the nations

of Asia east of the Oby, the Belur Tag, and the Himmaleh Mountains, with only a few exceptions. All these nations have a tawny or olive color—coarse, straight, black hair—small black eyes, rising in an oblique line from the nose to the temples—and high cheek bones. The form is usually shorter than in the European race, and not well proportioned. The coun tenance is nearly square, with a scanty black beard.

The color is described as intermediate between that of wheat and of dried orange peel, varying from a tawny white to a swarthy or dusky yellow. The nose is short and flat, the nostrils wide, the whole face broad and flattened, the eyebrows usually distant, and the lips thick and projecting. The opening of the eyelid is narrow, and quite straight, instead of being curved, as in the European race.

881. The Mongolians, Chinese, and Japanese, are the most striking *examples* of this race. It also embraces the inhabitants of the Frigid Zone, on both continents, including the Laplanders and Nova Zemblans, the Samoiedes, Ostiacs, Kamschadales, and most other tribes of Siberia, and the Esquimaux and Greenlanders; but these nations are much lower in stature, seldom exceeding four or five feet in height.

882. The American Race includes all the natives of America, except the Esquimaux and Greenlanders; and throughout this vast extent of country, and variety of climates, they preserve the same essential characteristics. They have a copper color, resembling that of rusty iron or cinnamon — coarse, straight, black hair,—high cheek bones—and sunken eyes.

The forehead is usually short—the nose and the whole countenance broad—the nostrils very open—and the lips thick The beard is thin and scanty.

It has been said that the Indians are destitute of beards; but it is well ascertained that this is not the case naturally; and that they take great pains to pluck them out.

Some of the American race have a lighter color than others. Thus Cook states, that the natives around Nootka Sound are little inferior in fairness to Europeans; and the same observation is made concerning the Peruvians. But these variations do not appear to arise from situation, as they do not correspond to the difference of climate.

883. The Malay Race, includes the inhabitants of Malaya, Ceylon, the Asiatic Islands, New-Zealand, and Polynesia, most of whom speak the Malay or some similar language. They are of a nut-brown color—with black eyes, black, curled hair, which is soft and abundant—a broad mouth and nose—and the upper jaw somewhat projecting. The form of the head is intermediate between that of the European and African races.

884. The African Race have black eyes—black woolly hair—flat noses—thick lips—and a projecting upper jaw. The forehead is retreating—and the head is usually less globular than the European. The most perfect examples of this race are the

Negroes south of the Sahara, in Upper and Lower Guinea, Soudan and Nubia. They are usually short, stout, and ill-formed.

885. The *Jaloffs* of Senegambia, and the *Caffres* who inhabit the eastern coast of Africa, resemble others of this race in their jet black color, and some of their features. But they are taller, more slender, and better proportioned than the rest; and their features have more resemblance to those of the European race.

The *Foulahs* of Western Africa, seem rather to belong to the Moorish family. They are only tawny; their features are small; and their hair soft and silky.

886. The *Hottentots* resemble the African race in their flat noses, thick lips, and low foreheads; and in their woolly hair, which is scattered in tufts over the head. Their color is yellowish brown. They have prominent cheek bones, and a pointed chin, which gives the face a triangular form.

887. The *inhabitants of the Australian Islands*, New-Britain, New-Ireland, New Holland, New Hebrides, New-Caledonia, and a few of the neighboring islands, and also of the interior and mountainous districts of Malacca, Borneo, and most of the Asiatic Islands, are a dwarfish species of the African race. Their hair is not unusually woolly; but the features are African. The jaws are often so prominent as to make them resemble the ourang outang. The inhabitants of the coast are generally of the Malay Race.

888. The *intermarriage and mixture of two principal races*, produce an intermediate race, usually partaking the qualities of both. From the intermarriage of the Europeans with Africans in the West Indies, has arisen a mixed race, called *Mulattoes*. In South America and Mexico, their intermarriage with the Indians, has also produced a very numerous intermediate race, called *Mestizoes;* and another called *Cholos*, between the Mestizoes and Indians. In the south-western parts of the United States, is a considerable number of a similar race.

The *Egyptians* have a yellow, dusky complexion, resembling that of Mulattoes; and seem to be intermediate between the Moorish or Arabian family of the European race, and the African race. This is also the fact with the nations on the eastern coast of Africa. Most of the *Hindoos* appear to partake of the qualities of the European race, from which they descended, and of the Mongolians, by whom they were conquered, and with whom they intermarried.

889. In examining the account of the races of men, it is not to be supposed that every individual of a particular race has all the characteristics mentioned, but only that they are general.

There is a great variety of features in individuals and in many

parts of the world, the different races pass into each other so gradually, that it is difficult to determine to which they belong.

The features and color of the inhabitants of Polynesia are very various, even in the same island, and often resemble those of Europeans. The higher classes have usually a lighter complexion than the common people; and some of the Otaheitans are so fair, that a blush may be distinctly perceived. Some instances have been known in which natives of these islands had the sandy or brown hair, and fair complexion of an European. The higher classes of most nations have usually finer forms and features, and fairer complexions than the lower. In India this is very conspicuous.

(II.) LANGUAGES.

890. *The Races of Men are divided* into a number of families, distinguished by a difference of *language*, as well as of form and appearance. Those of cultivated nations are written; those of Savage and Barbarous tribes are merely oral.

891. *The diversity of languages* is in part original, or so early that it cannot be traced to its source. But it is to some extent produced by the state and progress of society.

Almost every language is varied by different portions of the population who speak it, so as to form a number of branches, or *dialects;* and we seldom find it spoken in its purity, even in a cultivated nation, except by the higher classes. In England, France, Germany and Italy, it is often difficult for the inhabitants of different districts to understand each other; although their dialects were evidently derived from the same stock.

Still greater variations must exist where the language is not fixed by writing, but is dependent entirely on the habits of pronunciation, as in Savage and Barbarous nations; and especially as they are divided into a number of petty tribes, little connected with each other, and often at war. From these causes, we find the greatest number of languages and dialects among the Savage and Barbarous nations of Asia, Africa and America.

892. Great *changes also take place* in cultivated and written languages, by the lapse of time, and the removal and conquests of nations. *Every generation* invents new terms, and discards or changes those which were formerly in use. Even the English of a few centuries back is difficult to be understood by us. *A people entering a new country* must devise names for new objects, and will gradually alter their former modes of speech. *A nation subduing another*, will take a part of their language, and communicate something of their own. Thus new and compound languages are formed; as the English by the mixture of the ancient language with the Saxon and others.

893. In these methods, it is easy to conceive, that from one or a few original languages, an immense variety may gradually arise, and that little resemblance may finally be found among them.

The whole number of languages and dialects known upon the globe, is estimated by Adelung at 3626. Of these, there are in America 1214; in Europe 545; in Asia 995; and in Africa 276. Many are dialects differing little from each other; the resemblance of many others indicate a common origin; and all may perhaps be reduced, by a full examination, to a few hundred distinct languages. But we have too little knowledge of this subject to make any calculation with accuracy. They will be arranged according to the races of men by whom they are spoken.

LANGUAGES OF THE EUROPEAN RACE.

894. *The various languages spoken between the Ganges, the Bay of Bengal, and the Atlantic Ocean*, throughout Western Asia and Europe, present numerous and striking resemblances, and are supposed to have had a common origin.

895. *The Sanscrit* is the language of the sacred books of the Brahminic religion, and the parent of the numerous dialects of Hindoostan. The *Bali*, which resembles the Sanscrit, is the sacred language of the Boodhists, in Thibet, Ceylon, and Farther India.

The principal languages of Hindoostan are the Tamul, Bengalee, Hindoostanee, and Ceylonese. The language of the Gipsies, or *Zinganes*, who wander throughout Europe, differs little from the dialects of northern India.

896. *The Persian* language excels in sweetness and melody, and has been much cultivated. The modern Persian has a mixture of Arabic and Turkish. The language of East Persia, or *Afghan*, is derived apparently from the Persian and Sanscrit. The Persian only is used in composition. The Bucharian is also derived from the Persian.

897. *The Aremaic family* comprises the Hebrew and Chaldee, which are dead languages; the Syriac, which is only spoken to a limited extent; the Arabic and the Ethiopic.

The Arabic has been spoken and written through a long series of ages. It is the language of the Koran, or sacred book of the Mahometans; and has thus been spread as extensively as the religion of the Prophet. It is spoken in its greatest purity in Yemen, and is admired for its copiousness and strength. Corrupt dialects are spoken throughout Western Asia, Independent Tartary, and Northern Africa. It is taught in schools, in all Mahometan countries.

The Armenian is a peculiar language, but evidently allied to the other languages of the European Race.

898. *The Malay*, or language of the Malayan Race, is mentioned here, on account of the numerous words it contains, derived from the Sanscrit, Persian, and Arabic. The frequent occurrence of vowels and liquids, renders it the softest and most harmonious language of Asia, and it has been called the Italian of the East. From this character, and the extensive commerce of the Malays, it has become in some measure a universal language on the coast and islands of Eastern Asia.

Languages connected with the Malay are spoken from this peninsula to the coast of South America, throughout the various clusters of islands in the Pacific Ocean. *The numerous dialects of Polynesia* are remarkably similar; and the natives of the Society and Sandwich Islands, although so distant from each other, converse together with ease when they meet.

899. *The Greek* language appears to be of Asiatic origin. It is remarkable for its copiousness and strength, and the ease with which new compound terms are formed. Few languages continue to be spoken more than 300 years; but this is in use after the lapse of more than 3000. The modern Greek, or *Romaic*, does not vary essentially in its words from the ancient language; but has dropped many of its inflections and terminations.

900. *The other languages now spoken in Europe* may be divided into four principal families, the Gothic, (also called the Teutonic or German,) the Celtic, the Latin, and the Sclavonic.

The Gothic or Teutonic family embraces the German, Dutch, Danish, Norwegian, Swedish and Icelandic.

The *German* has a number of dialects, and is spoken in all the German States, Prussia, Switzerland, through a large portion of Austria, and in some parts of Russia. It is divided into the Upper German, spoken in the southern parts, or Upper Rhine; the Low German of the northern parts, or Lower Rhine; and the High German, which is exclusively the language of books and refined society, and is understood every where. The oral language of Hanover and the middle states is most similar to the High German. Even in its most improved state, the German appears harsh to a foreigner, on account of its numerous gutturals and aspirates. The *Dutch*, a derivative of the German, is still more harsh.

901. *The ancient Scandinavian language* is preserved in its greatest purity in Iceland. The *Danish and Swedish* are derived from it; and differ so little, that the inhabitants of each country can understand the writings of the other. The Danish is spoken among the merchants and higher classes of Norway. The *Norwegian*, which is also derived from the Scandinavian, is in use among the common people of Norway, and in the Faroe and Orkney Islands, which were colonized from that country. It is not used in books.

The Scandinavian dialects are characterized by the deficiency of gutturals and aspirates, which renders the pronunciation much less harsh than that of the German.

902. *The English language* is derived from a mixture of the ancient language of the country, with the Saxon, the Danish, and the Norman-French, which were

brought in by successive conquerors of England. In modern times, it has been highly cultivated, and enriched with numerous terms derived from the Latin and Greek. From the manner of its formation it is remarkably copious; yet it is the most simple of all European languages, except the Scandinavian, in its construction, and is formed much in the same manner. It has numerous irregularities in its structure and pronunciation, which renders its acquisition difficult to foreigners: and it is considered harsh and unpleasant in its sounds by other nations.

903. *The Celtic family* embraces the Erse or Gaelic, the Irish, and the Cimbric or Armoric, of which the Welsh is the principal dialect. The Celts were originally from Asia, and introduced their language by conquest into Gaul, or ancient France, and Britain. It has numerous resemblances to the Latin, and also to the Greek and the Gothic.

The Armoric is found in a corrupt state in Cornwall, in England, and in Britany, in France. The *Welsh*, which is nearly allied to it, is found chiefly in Wales, and in the opposite portions of Ireland.

The Gaelic is spoken by the Highlanders of Scotland. The northern Irish appear to be descended from them, and the languages are so similar, that the people easily understand each other. *The language of the Lowland Scotch* is a mixture of English and Gaelic, but is fast giving place to the pure English. Some believe it to be an older language than the English, and that the latter has been most changed.

904. *The Latin family* embraces the Latin, Italian, Spanish, Portuguese and French. The *Latin* is the general language of the learned, throughout the civilized world; and was not long since used in conversation in Poland.

905. *The Italian* was gradually formed from the Latin, between the seventh and fourteenth centuries, and has some mixture of Gothic and Arabic words. It is found in the greatest purity in Tuscany. It is proverbial for its softness and melody, and is considered superior to any other language in music and poetry. Like the Malay in the East Indies, it has become the language of commerce in almost every port of the Mediterranean. As pronounced at Rome, it is sonorous and majestic. In many parts of *Tuscany*, the pronunciation is rendered harsh by the use of aspirates. *Venice* has its own peculiar dialect, which excels in softness. In *Naples*, the language is very much corrupted.

The Sicilians, having been conquered in succession by the Greeks, Arabs, Normans, Germans, French and Spaniards, speak a peculiar dialect, comprising a part of all these languages. The languages of Sardinia and Corsica have been mixed and corrupted in the same manner.

906. *The Spanish* language is a mixture of Latin, with the Celtic and the Arabic, introduced by the Moorish conquerors. It is remarkably sonorous, grave, and dignified. *The Portuguese* bears a close resemblance to the Spanish, from which it appears to have been formed.

The Spanish and Portuguese converse together with some ease; and an Italian is partially understood by both nations.

907. *The Romanese*, or Romance language, is a mixture of the ancient Roman with the dialects of several Gothic and Celtic nations. It is still spoken by half the people of the Grisons, a canton of Switzerland. *The Walloon* of the Southern Netherlands is also a dialect of the Romanese. *The Wallachian* of Turkey is derived from the Latin, combined with the Sclavonic.

The French is chiefly composed of the Romanese dialect, mixed with the language of the Franks and Germans. It is one of the most refined in Europe. It has gradually become the language of courts in many of the continental nations, and is spoken almost exclusively by the higher classes in Holland.

908. *The Sclavonic family* originated from the Sclavonians, or Sarmatians, who resided north of the Danube and the Black Sea; and dialects of this language are spoken by the Poles, Russians, Bohemians, and the Illyrians and Croatians residing between the Upper Danube and the Gulf of Venice.

The Russian language has a mixture of Greek, Swedish, and Tartarian, with the Sclavonic; and the others of this class are more or less mixed with the language of the surrounding countries. One-third of the Bohemians are of German origin, and speak a corrupt German

909. In addition to these, there are four peculiar languages in Europe:—the *Hungarian*, the *Albanian*, the *Finnish*, spoken by the Fins and Laps, and the *Basque*. The *Basque* is a peculiar and primitive language, spoken in the neighboring corners of France and Spain, on the coast of Biscay. It is entirely distinct from all known languages in etymology and construction.

910. The languages of the semi-barbarous tribes between the Black and Caspian Seas have been divided into two great classes, *the Caucasian* and *Georgian*. They exhibit a great diversity in the space of a few miles, and the resemblances between them have not been traced.

911. *The Turco-Tartarian languages* are spoken throughout Independent Tartary, except Bucharia, extending into Chinese Tartary on the east, and north, as far as Kazan, Tobolsk, and Tomsk, into the Russian Empire, and also by the Yarkuts and Teleuts on the River Yenesei in Siberia. The dialects vary so little, that all who speak them understand each other with ease.

The cultivated language of Turkey, whose inhabitants are descended from the Turcomans of Central Asia, has been much mixed with the Persian and Arabic, and is written in the Arabic characters. It is remarkable for its gravity and dignity.

LANGUAGES OF THE ASIATIC RACE.

912. *The languages of Eastern Asia*, comprising those of China, Corea, Japan, Tibet, and Farther India, are very peculiar in their structure, and have many resemblances to each other, either in radical words or grammatical form. They are classed together by Adelung, under the name of Monosyllabic Languages.

The Chinese written language, is a collection of hieroglyphical characters, one of which, either simple or compound, is employed to express every idea: thus, the characters of sun and moon united denote splendor. The number of elementary characters is stated to be 214; the compound exceed 40,000.

The language of conversation consists of about 330 monosyllables. These are so varied by accents as to form 1300 words; but the variation is so slight, that it is often necessary to trace the character with the finger in the air, in order to make a word intelligible.

The Japanese, the Corean, the Tibetan, and *the Anamic*, which is spoken in Cochin China, Tonkin, and Cambodia, contain many Chinese words.

The *Avan or Burman* has many resemblances to the Tibetan. The *Siamese* is the most peculiar in its character, and extends throughout Laos, into the southern provinces of China. The *Peguan*, in the south of the Burman Empire, is little known.

913. The languages of Northern and Central Asia are less cultivated and less understood than the preceding.

The *Mongolian* and its dialects are spoken throughout the greater part of Chinese Tartary, and extend from Tibet on the south to Yeneseisk on the north.

The *Tungusian* is an original language, of which the *Mandshurian* of Eastern Tartary is a refined and written dialect. They are spoken from the peninsula of Corea to the Northern Ocean. The Tungusian and Mongolian present numerous striking resemblances to each other, and to the Turco-Tartarian languages, both in radical words and grammatical forms.

The principal remaining families of Northern Asia are the Samoiedes and Finns on the west, extending into Europe; the Yeniseans, in the centre; the Kurilians, on the coast of Eastern Tartary; and the Yukagirs, Koriaks, Kamschadales, and Esquimaux, who occupy the north-eastern extremity of the continent. Their languages are imperfectly known, and their connection is not understood.

LANGUAGES OF THE AFRICAN RACE.

914. *The number of African languages* is supposed to be more than 200; and 70 or 80 have been distinguished with tolerable accuracy. But they are too imperfectly known to admit of minute description.

In Northern Africa, the Copts of Egypt have a peculiar language in their sacred books, which is no more employed in conversation. The Turkish and Arabic are spoken by the Turks, both in Egypt and Barbary. The *Brébers* of

the desert preserve a common language, (supposed to be the ancient Numidian,) through a great extent of country, together with the Arabic of the Koran. The *Ethiopic*, or Geez, and its modern branch the *Amharic*, are the principal languages of Abyssinia; but various other dialects are in common use.

915. *In Western and Central Africa*, many of the languages have similar combinations of letters, and some common words. But almost every tribe of negroes has a distinct language, and it often varies from village to village.

The *Hottentots*, *Boshjesmans*, and other tribes of South Africa, speak various dialects, apparently of a common origin. They differ from all others in a sort of clucking noise, somewhat like that of a fowl, which attends every word.

The *Caffres* have a different language, as well as a different aspect from the surrounding Negroes. The people of the eastern coast, north of these, are said to bear marks of the same origin.

LANGUAGES OF THE AMERICAN RACE.

916. *The languages of America* are known but imperfectly, and there is a great variety of opinions concerning them. In North America, *east of the Mississippi River*, all known languages are traced by the latest authors to three or four great branches.

1st. The Karalit, or *Esquimaux*, is spoken by the Indians of this name on the northern and north-eastern coasts. It has been found to be the same with that of the Tschutkis, or eastern Siberians. 2d. The *Delaware*, sometimes called Mohegan and Algonkin, is the most widely diffused. It prevailed among all the ancient tribes of New England, and those north of the Ohio River and the Lakes, and as far west as the Rocky Mountains. Dialects of this language are still spoken by the Chippeways, Shawnees, Ottawas, and Winnebagoes. 3d. The *Iroquois* is a distinct language, remarkable for wanting all labials, and therefore is very sonorous. 4th. The *Floridian family*, according to Heckewelder, is a distinct branch, embracing all the dialects on the Gulf of Mexico.

917. *West of the Mississippi* there are many languages not well known. Among these are the Sioux and the Pawnee, in the north; and in the south, a great variety.

Mexico is said to have more than twenty languages, many of which are as distinct from each other as the Greek, the German, and the French. Fourteen have grammars and dictionaries. The Aztec, or ancient Mexican, is the most prevalent. On the coast of California, no less than seventeen are spoken, which differ considerably.

918. The *Caribbee* is the native language of the northern parts of South America, and was that of the West India Islands.

The language of the Incas, which is called the *Quichua*, prevails in Peru and the neighboring districts. It is described by a native of that country as abounding in vowels, and peculiarly soft in its sounds.

The *Araucanian* of Chili is also described as a distinct language, remarkably rich and harmonious.

919. *The character of the American languages* is by no means such as we should expect among barbarous nations. Some resemblance has been found to Asiatic dialects; but their *origin and connections* have not been fully investigated. Although they were never written by the Indians, they are remarkably artificial and complicated in their *structure*. Some of them are almost destitute of the irregularities found in the languages of the civilized world. Words are easily combined so as to express every *shade of meaning* with exactness; and the Chilese is said to be far more precise than European languages. There is such a variety of words to express a single idea, that without a full examination, they would be considered as belonging to a different language; and hence the variation of dialects is much less than at first appears. Some, like the Mexican and Chilese, are distinguished for their *copiousness* in abstract terms; so as to render them peculiarly suitable for discussion. They are remarkable for the length of their words, and are generally sonorous and agreeable in their *pronunciation*.

A distinguished scholar (*Duponceau*) who has investigated these languages, declares himself 'lost in astonishment' at their copiousness and singular structure.

WRITTEN LANGUAGE.

920. The languages of savage and barbarous nations have no *alphabets*, and are not written. Although many of the languages of America are very artificial in their structure, no native people of this continent have devised an alphabet; and other methods were used for recording events.

The Indians of South America, at an early period, used knotted cords, called *quipo*, as a record; and the North American Indians were accustomed to deliver a belt of *wampum*, as the memorandum of each portion of a speech or message.

The most perfect means of recording events among the natives of America, was the *picture-writing* of the Mexicans. It was a mixture of painting and hieroglyphical emblems, and was the only means of communicating information at a distance. The Indians of the United States convey intelligence by drawings and symbols of the same nature, but executed in a very rude manner.

921. *The Chinese characters* are a species of hieroglyphics of a more artificial kind; and are employed by the Cochin Chinese, Tonquinese, and Japanese, who do not use the same sounds to express them. They are written in columns from the top to the bottom of the page.

922. *Written alphabetical languages* are found only in the civilized and half-civilized nations of the world.

In Asia, the Sanscrit appears to be the most common. It is written from left to right. The Tibetians use the Sanscrit alphabet for sacred purposes; but they have another for the common concerns of life. A number of peculiar alphabets are found in Eastern Asia.

The Arabic character is used for the Arabic, Turkish, Persian, and Malay languages; and is written from right to left.

In Europe, the Greek character is used by the modern Greeks. It was also varied by some of the Christian Fathers to adapt it to the Sclavonic languages, and has ever since been used among the Sclavonic nations. In Germany, the Gothic character, (or German text) is still used to some extent. In other parts of Europe, and in European colonies, the Roman character is universally employed. All these are written from left to right.

The languages of several tribes in North and South America, and of the Society and Sandwich Islands, and New Zealand, have been formed into written languages by European and American missionaries, within a century past. The Roman Alphabet with some variations has been adapted to them, and used in printing books for the use of the natives.

CIVILIZATION.

923. Mankind are found in different states of society; the Savage, Barbarous, Half-civilized, Civilized, and Enlightened.

1. The Savage State is that in which men gain their support chiefly by *hunting*, *fishing*, or *robbing*, dress in skins, and generally live in the open air, or in caves, dens, or miserable huts. They have little knowledge of agriculture, the working of metals, or the mechanic arts; no division of lands; and no system of laws; and they seldom collect in towns or villages.

924. A savage claims no private *property* but his dress, arms, and family. The produce of hunting, and of agriculture, when it is practised, is the common property of the tribe, and equally divided among them. The greater part of North and South America—the interior of Africa—the northern shores of Asia—and the islands of Australia are occupied by savage tribes. They are not accustomed to any fixed *residence*, and rove, like

the beasts of the forest, from place to place, as they are impelled by necessity or inclination.

925. The BARBAROUS STATE is that in which nations subsist by *agriculture*, or *the pasturage of cattle and sheep*, with some knowledge of the use of metals, and the mechanic arts.

They have some regular forms of government and religion, but *no written language* or books.

926. There are *two classes of barbarous nations*. The greater part of Siberia, Tartary, Arabia, and the deserts of Africa, is occupied by *wandering tribes*, who live in tents; subsisting chiefly on the milk and flesh of their camels, horses, cattle, or sheep, and moving from place to place to obtain pasturage.

The barbarous nations in the fertile regions of Africa, and the islands of Asia and Polynesia, find an abundant supply of food in the spontaneous productions of the earth, with very little labor. They have therefore no inducement to a wandering life, and are usually *settled* in villages.

927. The HALF-CIVILIZED state is like that of the Chinese, who understand agriculture and many of the arts very well, and have some books and learning, with established laws and religion. Still *they treat their women as slaves*, usually keeping them in confinement; and have many other customs like those of barbarous nations. They have little foreign commerce, and make few or no improvements in arts and learning. China, Japan, Southern Asia, Persia, Turkey, and Northern Africa, are the principal countries in this state of society.

928. The CIVILIZED STATE is that in which the sciences and arts are well understood; especially the art of printing; and females are treated as companions. Some nations of this class have advanced no farther, and are considered merely as civilized. They retain many barbarous customs; and the great body of the people remain in gross ignorance; as in Poland, Portugal, and a large part of Russia.

The *colonies* which are formed by enlightened nations in uncivilized countries, are usually for a long time in this state of society, as in South America. From the peculiar difficulties and dangers of new settlements, and the want of means of improvement, they advance slowly in knowledge and refinement.

929. There are others which may be termed *enlightened nations*, in which knowledge is more general, and the sciences and arts are found in the greatest perfection; as in most of the nations of Europe. All the branches of art and manufacture are carried on in a more skilful, productive, and useful manner, with the aid of machinery, and a minute division of labor. Commerce is ex-

tended to every quarter of the globe. The political institutions are also such as to give greater liberty and more safety than in other countries; as in the middle and north of Europe, and the United States.

The degree of civilization of each country is shown on the Chart of the World, by several shades, which are there explained, and the student should make himself familiar with the general state of the world, by examining the condensed view of it there exhibited.

GOVERNMENT.

930. A *state* is a body of people, connected under the same government, and yielding obedience to the same laws. It is called a duchy, principality, kingdom, empire, or republic, according to its form of government.

931. In every government there are three distinct powers to be exercised;

1. The power of making laws, or the *legislative*, which sometimes belongs to one man, and sometimes to a number of men called a *legislature*. 2. That of administering justice, or the *judicial power*, usually in the hands of *judges*. 3. The power of executing the laws, or the *executive*, which generally belongs to the *chief*, *king*, *president*, *duke*, or other supreme head of the government.

932. The ruler of a country is usually assisted in his duties by a number of persons chosen by himself, called *ministers*, *councillors*, or sometimes, as in the United States, *secretaries*. As he also consults with them on affairs of importance, they are called his *cabinet*, or *council*, and in Turkey, the *divan*. The prime minister in Turkey and Persia is called the *vizier*.

933. *The three principal forms* of government are monarchy, aristocracy, and democracy.

A *democracy* is a government in which the people assemble to make laws. A pure democracy is rarely found, except in towns, or very small states. A *republic* is a democratic government, administered by rulers chosen by the body of the people; as in the free states of North America.

934. A *confederation*, or federal republic, is a union of several independent states, for mutual aid and defence, under the direction of a general assembly; as in Germany, Switzerland, and the United States of North America.

935. An *aristocracy* is a government in the hands of a few persons, usually called nobles. Aristocracies are sometimes called republics; as was that of Venice.

936. A *monarchy* is that form of government in which the supreme power is in the hand of one man (styled a monarch),

during life. In almost all the monarchies now existing, the throne is hereditary; that is, it descends to a member of the same family.

937. In an *absolute monarchy*, the monarch makes laws at his own pleasure, without any control from others; as in Russia. If he governs without established laws, and merely according to his own will, the government is usually called a *despotism;* as in Persia.

938. When the power of the monarch is limited by a constitution, or an assembly of the people, the government is called a *limited monarchy;* as in Great Britain.

939. The *first kind of government* in the world was the patriarchal, in which every father or patriarch governed his own family and servants as a monarch. The inhabitants of Lapland, Greenland, New-Holland, and a few other portions of the world, which are either islands or very small countries, appear to have no other government than that which arises from the natural authority of parents over their families.

940. By the increase of families, and alliances formed for mutual defence, some patriarchs became governors of many kindred families, or a tribe, and were called *chiefs*. The government of *Savage* and *Barbarous* nations is usually that of patriarchs or chiefs.

The names given to chiefs vary in different nations. Among the North American Indians, they are called *sachems;* in South America, *caziques;* and in Asia, usually *khans*. In Europe, the *dukes* of independent states have similar powers, probably obtained in a similar way. The title, however, belongs to many noblemen who have none of the original powers of a duke.

941. When a particular chief became very powerful, he often conquered many others, and became monarch of a large country. He was then called a *king* or *emperor;* or in Asia, a *sultan*, *rajah*, or *shah*. All these are really monarchs, differing in the extent of their government rather than in the nature of their power.

942. The *power of the chiefs*, in Savage or Barbarous tribes, is chiefly that of influence. The oldest and wisest govern in the council; and the bravest lead in war. This is generally the state of the Indians in North America.

In *temperate* and *cold countries*, it is more common for the tribes to be governed by councils of the old men and warriors, and no important measure can be decided without their consent. Their governments seem to be democracies, in which the younger voluntarily submit to the decision of the older. This is the casewith some of the smaller nations on the *western coast of Africa*. Their public business and trials are all conducted in a

meeting called a *palaver*, which is attended by the whole village or tribe.

943. *In the warmer regions of America and Africa*, the chiefs of Savage tribes are either elected for life, or inherit the dignity, and are absolute in their power. Mexico and Peru were formerly absolute monarchies, in which the highest veneration was paid to the king.

944. The Savage and Barbarous tribes of *Siberia* and *Tartary* have a great variety of governments. Some of them are democratic, and others aristocratic; some absolute, and others limited monarchies. But the governments of Savage and Barbarous nations are not usually well defined or fully understood by travellers.

945. *Arabia* is governed by a number of independent chiefs, called imams, emirs, or sheiks, whose authority is in some tribes absolute, in others limited. The state of *Beloochistan* is nearly similar; but the Khan of Kelat is here acknowledged as superior to the chiefs of other tribes. *Cabul* is an absolute monarchy.

946. *In the absolute monarchies of Asia and Africa*, the king is a despot, with the power of life and death. There is no assembly of the people, or privileged order of hereditary nobles, to control his power, nor any law to limit its exercise. The governments of Abyssinia, Sennaar, Morocco, Fezzan, and most of the *kingdoms of Africa*, are of this kind.

Dahomey is the most despotic government known. The king is regarded as a superior being; his subjects consider themselves as his slaves, and submit to the most barbarous and oppressive treatment.

947. *In Persia and Turkey* the only check upon the power of the Sultan is the Koran. This is interpreted by the Ulema, or doctors of law, officers who are appointed by the sultan; and their opinion is of course usually accommodated to his wishes. These monarchs are revered as the successors of Mahomet, and have on this account a peculiar power. The Turkish sultan is restrained from no crime except by the fear of insurrection; but the government has become more regular and mild of late. In both these countries, however, there are many wandering tribes, governed by independent chiefs, who are only tributary to the sultan, and must be courted by him in order to preserve their friendship.

948. The Pachas of *Tripoli*, *Tunis* and *Egypt*, are absolute chiefs or monarchs. These chiefs are nominally subject to the Emperor of Turkey, and send an annual tribute, often very small. They are independent in their own territories. In all

these absolute governments, the monarch is liable to be dethroned by insurrection; and oppressive monarchs are often cut off in this way. *Algiers*, once governed by a Pacha, is now possessed by the French.

949. *The Emperor of China is considered* as the father of his people, and bound to consult their good. His power is absolute; but there are established laws and customs, which it would be dangerous to violate. The government is administered by nine orders of inferior officers, called by Europeans *mandarins*. The only qualification for office is learning; and regular examinations are holden for those who wish to obtain it. Each mandarin governs all below him with the same absolute power as that exercised by the emperor; and

950. In *Siam*, *Burmah*, and the independent kingdoms of *Hindoostan*, there are books of laws to regulate the administration of justice; but the whole power is in the hands of the king. In these, as in all the Barbarous and Half-Civilized countries of the world, the absolute monarchies are really despotisms, notwithstanding any seeming limitations of the power of the monarch.

951. *Russia* was until lately an absolute monarchy, uncontrolled even by a constitution. The emperor Alexander declared it a constitutional monarchy. He appointed a senate, with the power of remonstrating against any unconstitutional ukase (or edict,) whose proceedings are published every month. But the great body of the people are still vassals, or slaves; and the power is entirely in the hands of the emperor and nobles.

952. *Prussia* and *Denmark* were formerly limited, but are now absolute monarchies, without any check on the power of the king, except established customs.

In the kingdoms of *Naples* and *Sardinia*, *the Roman States*, *the Duchy of Tuscany*, and *most of the duchies* of Italy and Germany, the government is also absolute.

The duchies of *Hesse-Cassel*, *Nassau*, *Saxe-Gotha*, and *Saxe-Hildburghausen*, have representative governments.

953. *Spain* and *Portugal* were formerly governed by absolute monarchs. They have been in a revolutionary state for several years; and now have a cortes, or congress to limit and direct the power of the king; but they are not yet in a settled state.

954. *In the limited monarchies of Europe*, the executive power, and the appointment of judges, usually belong to the king. The legislative power is shared between the king and an assembly of the people, and the consent of both is necessary to the passage of a law. The assembly is called a *parliament* in

England; in Germany, Sweden, Norway, &c. a *diet;* and in Spain and Portugal, a *cortes*. This assembly corresponds to the *congress*, or a *legislature*, in the United States. It is usually composed in part of *nobles* or *peers*, who inherit this dignity; and in part of representatives chosen by the people; so that these governments combine the features of a monarchy, aristocracy, and democracy.

955. The power of the Emperor of *Austria* is generally absolute. It is limited in Hungary, and some other states of his empire, by provincial diets, which determine the mode of raising taxes, and regulate their own internal concerns; but the emperor determines on all the general affairs of the empire.

956. *Sweden* has a diet, composed of four states or houses; one of nobles, appointed by the king; one of representatives, from the clergy; one of burgesses, chosen by privileged towns; and one of peasants, every member of which must belong to the class of farmers by birth. It must be assembled at least once in five years.

957. In *Great Britain*, there are two houses in the parliament, a House of Lords, composed of hereditary nobles and the highest dignitaries of the clergy; and a House of Commons, chosen by the people. The representation in the House of Commons is very unequal, and large portions of the people have no voice in the choice of their rulers. In some cases, a few electors of towns or boroughs, send as many representatives as 70,000 people in other parts of the country. The whole kingdom is termed the United Kingdom of Great Britain and Ireland.

958. The constitutions of *France* and the *Netherlands*, generally resemble that of Great Britain. In France, every citizen may vote who pays a tax of 177 dollars annually.

959. The kingdoms of *Bavaria* and *Wurtemburg* have limited monarchies of the same general character with that of Great Britain. *Hanover*, and *Norway*, have also diets for their own government, but are under the dominion of foreign princes. The King of England is King of Hanover; the King of Sweden, of Norway. The Emperor of Russia, is King of *Poland*. This country had a diet, composed of two houses; one of peers, chosen by the king; and another of representatives, chosen by the nobility and gentry. It was abolished in 1832.

The king of *Saxony* is so far a limited monarch that he cannot make any change in the religion, laws, or taxes, without the consent of the people.

960. The independent states of Switzerland and the United States, are *the principal examples of republican governments.*

Some of the states, or cantons of *Switzerland*, are democratic in their government, and others aristocratic.

The individual states of the American Union are democratic republics, governed by assemblies, and a governor chosen by the people for a limited time. There are usually two houses of representatives, which are united with the governor in making laws. The executive power is vested in the governor and his subordinate officers; and the judicial power, in judges, appointed in different ways, but usually for life.

In Italy, is the little republic of *St. Marino*, of only seven thousand inhabitants, which has preserved its freedom for centuries. The *Ionian Isles* are also formed into a republic under the protection of Great Britain.

961. The Spanish American states in Mexico, Gautemala, Colombia, Peru, Bolivia or Upper Peru, Chili, and La Plata, have republican governments.

The island of *Hispaniola* or *St. Domingo*, forms the republic of Hayti; a government established by Africans, who were formerly slaves to the French inhabitants of the island.

962. *The principal confederations* of states now existing, are the United States, Germany, and Switzerland. In these countries a number of independent states are united for mutual defence; but each retains, to a certain extent, its own government within its own limits.

In *Germany and Switzerland*, there is a general diet, composed of representatives from each of the states. It has power, under certain restrictions, to raise money, make war, and take other measures for the general welfare; and to settle disputes between the states. It does not interfere in the internal concerns of any; but each state contributes its own proportion of men and money, according to its own choice.

In *Germany*, the general government holds several important fortresses, and chooses the commanders of armies, subject only to its orders. In the diet, each state has a vote in changing the constitution: but in all ordinary measures, they have influence according to their extent; and several of the smaller states are associated to give a single vote.

963. The states forming *the confederation of the United States*, are more intimately connected than those of Germany. The general government has the power of raising taxes, and collecting revenue in the individual states, as well as of making war and peace, collecting armies and establishing fortresses.

The United States were formerly colonies or provinces of Great Britain. On the 4th of July, 1776, they were declared independent; and a few years after, the present constitution or system of government was formed. There are now 24

separate states, united into one republic, and four territories, beside the great western territory, formerly called Louisiana.

964. *The laws are made* by the congress, which consists of a House of Representatives, chosen every two years by the people of each state, according to their population; and of a Senate of two from each state, chosen for six years.

By this feature of the constitution, the power of the large and small states is in some measure equalized. In the house of representatives, the large states prevail by the greater number of representatives. In the senate, the small states have equal power with the larger, in preventing the passage of a law.

965. *The laws are executed* by the president, who is chosen every four years, by electors appointed by the respective states. He is *assisted by* the Secretary of State, and the Secretaries of War, of the Navy, and of the Treasury, who form the Cabinet. The President, with the approbation of the Senate, appoints the inferior officers of government, and those of the army and navy; most of whom can be removed also in the same manner.

966. *The Judges of the United States* are appointed by the President and Senate for life; and cannot be removed except by a public impeachment and trial for ill conduct. Their duty is to decide causes arising under the constitution and laws of the United States, or those in which both parties are not subject to the laws of any single state.

RELIGION.

Confession. *The Mass.*

(33.) *Catholic Rites.*

967. *The prevailing religions of the world* are the Jewish Christian, Mahometan, and Pagan.

968. The JEWS are descendants of Abraham, who believe the Scriptures of the Old Testament, but reject the New Testament, and expect a Messiah yet to come. Agreeably to the prophecies of Scripture, they remain a distinct people, scattered through all parts of the earth, but nowhere forming an entire nation. They are not admitted to the common privileges of citizens, in any country except the United States. In Catholic and Mahometan countries, they are regarded with peculiar detestation, and generally suffer much from oppression and persecution. It is stated that there are 15,000 in the United States. They are chiefly resident in the cities, and have Synagogues in New York, Philadelphia, and Charleston.

At Cochin, on the Malabar coast of India, there is a colony of Black Jews, and another of White Jews, who retain a tradition that their ancestors arrived in India soon after the Babylonish captivity.

969. CHRISTIANS are those who believe in Christ as the Savior, and receive both the Old and New Testaments, as the guide of their faith and practice. Christianity teaches the existence of One Supreme and Holy Being, the Creator of the Universe; it inculcates a pure system of morality; and requires benevolence towards all men.

There are *three great divisions of Christians*:—the Eastern Church, Catholics, and Protestants, distinguished from each other by peculiar doctrines and modes of worship.

EASTERN CHURCH.

970. The *Eastern Church* is found chiefly in Eastern Europe and Africa, and Western Asia; and its doctrines prevail over a great extent of country. It is distinguished for the variety of ceremonies used in its worship; for the number of holy days; and especially for the number and rigor of its fasts.

The Christians of the Eastern Church invoke saints in prayer; they kneel and burn incense before their pictures and relics, although they do not allow the use of images; and they practice many other rites which are considered superstitious by Protestants. They are required to confess their sins to the priest and obtain his absolution; and they offer prayers for the dead, to procure their release from purgatory.

971. That branch of the Eastern, which is styled the *Greek Church*, embraces nearly all the inhabitants of Russia, and two thirds of those of Turkey in Europe. The latter are subject to the Patriarch of Constantinople, who is revered as the nominal head of a large part of the Eastern Church. There are also branches of the Greek Church in Circassia, Georgia, and Mingrelia, between the Black and Caspian Sea.

972. In *Egypt*, there are 30,000 of the Eastern Christians, called Copts, subject to the Patriarch of Alexandria. *The Abyssinians* also belong to the Eastern Church, and receive their bishops from Egypt; but Christianity is here grossly corrupted by the mixture of Jewish rites and barbarous customs; and little regard is paid to the purity and benevolence it requires.

973. *The Armenians* are an independent branch of this Church, whose patriarch resides at the foot of Mount Ararat. They are found chiefly in Armenia; but they also have churches in various parts of Persia, and in Russia and Poland.

974. There are two classes of Christians in the East—the Nestorians, and Christians of St. Thomas—who resemble Protestants in their doctrines and modes of worship. The *Nestorians* are found in Tartary. The *Christians of St. Thomas* form a distinct body of people in the mountainous region of Cochin, on the coast of Malabar. Their number is about 150,000. They appear to have been taught by some of the early preachers of Christianity. They preserve a great degree of simplicity in their worship, and purity in their morals. One portion of them have become Catholics.

975. The Scriptures are very rare among *the Christians of the Eastern Church*, even in Russia; and the people and priests are generally in a state of gross ignorance, except with regard to the mere ceremonies of worship. The Circassians and Georgians are in a state of barbarism as to knowledge and morals; and the priests are little better than the people.

ROMAN CATHOLICS.

976. *Roman Catholics* are those who acknowledge the Pope, residing at Rome, as the head of the church, which the Eastern Churches do not. They receive the decisions of the church, and a large party, those of the Pope, as infallible, on points of doctrine and duty. They resemble the Greek Church in most of the ceremonies and doctrines, just described; but differ from them in refusing to ordain married men to the sacred office, and in allowing the use of images in their churches. They pay religious homage to the eucharist in the ceremony of the *Mass*.

Their clergy are well educated; but in the Roman Catholic countries of Europe, the common people are not allowed to read the Bible, and are generally very ignorant. Like the Eastern Church, they have numerous holy days, or feasts and fasts.

977. *The Roman Catholic Religion is most prevalent* in the middle and southern countries of Europe, and in the French, Spanish, and Portuguese colonies in America and Africa. In the

United States, the people of Louisiana, Missouri, and Florida, are chiefly Roman Catholics; and they are numerous in Maryland. All these States were settled by persons of this denomination. The whole number in the United States is estimated at 500,000 to 600,000, with 230 clergymen. They have also a number of literary and religious institutions.

There is an incorporated society of Jesuits, at Georgetown, containing 93 members, and a Sulpitian Monastery at Baltimore. There are convents at Georgetown, Port Tobacco, and Emmetsburg in Maryland—others at Boston and New York—three in Kentucky—and one in Missouri—containing in all from 100 to 200 nuns. The Roman Catholics have colleges at Baltimore, Georgetown, New-Orleans, and St. Louis; and seminaries at several other places.

PROTESTANTS.

978. PROTESTANTS are those who do not submit to the authority of the Pope, or of the Roman Catholic or Eastern Churches; and generally admit no rule of religious belief or practice, except the scriptures. They have more simple forms of worship, and fewer ceremonies and holy days.

979. *They are divided* into a number of sects, of which the principal are Lutherans, Calvinists, Episcopalians, Presbyterians, Congregationalists, Baptists, Methodists, Moravians or United Brethren, and Friends or Quakers.

Luther, and the first reformers who left the Catholic Church, were called Protestants, because they protested against a decree of the emperor and diet of Germany, which condemned their opinions. The name was afterwards applied to all who dissented from the Roman Catholic Church.

980. On the continent of Europe, *Protestants are usually divided* into Lutherans and Calvinists.

Lutherans are the immediate followers of Luther, found chiefly in Norway, Sweden, Denmark, Prussia, Germany, and Hungary.

In Sweden and Denmark, the Lutherans are governed by bishops; and in other countries by superintendents, whose power is much more limited, and derived merely from their election. The Laplanders are professedly Lutherans; but there is a great mixture of superstition and idolatry in their opinions and worship.

In the United States, there is a number of Lutheran churches in Pennsylvania and Maryland.

981. *Calvinists* are those who adopt the peculiar opinions of Calvin. They are most numerous in Scotland, Holland, Switzerland, France, Germany, and the United States.

The Lutherans and Calvinists of some parts of Germany, and the neighboring countries, have recently united into one body, under the name of the Members of the Evangelical Faith.

982. *In Great Britain and the United States*, the opinions of Protestants are so various and so well known, that it is only necessary to mention the principal classes, as distinguished by peculiarities in their government or religious rites.

983. The reformed church established in England and Ireland, is called the Episcopalian, because it is governed by bishops. *Episcopalians* are chiefly found in Great Britain and the colonies settled from it. In the United States, they have 11 bishops and 700 churches. They are most numerous in the middle and Southern States.

984. *Presbyterians* are those Protestants, who are governed by representative bodies of the clergy and laity, called Presbyteries. The established churches of Scotland and Holland are Presbyterian. This is also the prevailing denomination in the Middle United States; probably the most numerous south of the Hudson River.

One portion of the Presbyterians in the states of New York and New Jersey, form a distinct body, under the name of the Dutch Reformed Church. It is composed almost entirely of descendants from Dutch emigrants.

985. *Congregationalists* are distinguished from Presbyterians, chiefly by the fact that each congregation claims the right of governing itself, except in those cases where it voluntarily submits to the authority of others convened in council. They are considerably numerous in England; and embrace most of the inhabitants of the Eastern United States. They are sometimes called Independents.

986. *Moravians*, or the United Brethren, are chiefly found in Moravia and other parts of Germany. Their whole number is stated to be 40,000. A few Moravian settlements exist in the United States, of which Bethlehem and Nazareth in Pennsylvania, are celebrated as places of education for children.

987. *Mennonites or Baptists*, are most numerous in Germany, Holland, and the Middle and Southern United States, and form a large and increasing body of Christians.

988. *Methodists* are chiefly found in Great Britain, the United States, and the English colonies in America. They are divided into several portions, of whom the Wesleyan or Episcopal Methodists are the most numerous. A division has recently taken place among them in this country. The Whitfield Methodists are chiefly found in England.

989. *Friends or Quakers*, are found chiefly in England and the United States. There are 500 congregations in the United States, most of which are in the Middle States. They are most numerous in Pennsylvania, which was originally settled by them.

990. These sects are also subdivided, in some measure, in opinion. Most of the Presbyterians and Congregationalists maintain Calvinistic opinions; a part of them are Arminians

Unitarians, who do not admit the doctrine of the Trinity, and *Universalists*, who deny the eternity of future punishments, are formed into distinct sects in the United States.

991. The following tables exhibit the numbers and distribution of different sects of Christians in Europe and the United States, according to the best estimates.

TABLES OF CHRISTIAN DENOMINATIONS.

EUROPE.

Denominations.	*Number and Countries.*	
Roman Catholics,	117,000,000—Southern and Middle Europe.	
	—Spain, Portugal, and Italy, exclusively.	
	—France, Austria, Poland, Belgium and Ireland, almost entirely; and a large part of the German States.	
	—Switzerland has 700,000—England 500,000.	
Greek Church,	50,000,000—Russia and Greece.	
	3½ millions in Austria.	
Protestants, . .	48,000,000—North-western Europe.	
—Lutherans, . . .	—Sweden, Norway, and Denmark, ...	5,500,000
	—Russia, ...	2,500,000
	—Germany, Lutherans and Reformed, . . .	16,000,000
	(Prussia 6 m. Austria 3. German States 6.)	
—Other Protestants,	—Great Britain, ...	16,000,000
	—Holland, ...	2,500,000
	—Switzerland, ...	1,000,000
	—France, ...	3,000,000

The remainder of the population of Europe consists of *Jews*, scattered through all parts—*Mahometans* in Turkey, and Southern Russia, and a few *Pagans* in Russia—whose respective numbers are variously estimated.

UNITED STATES.

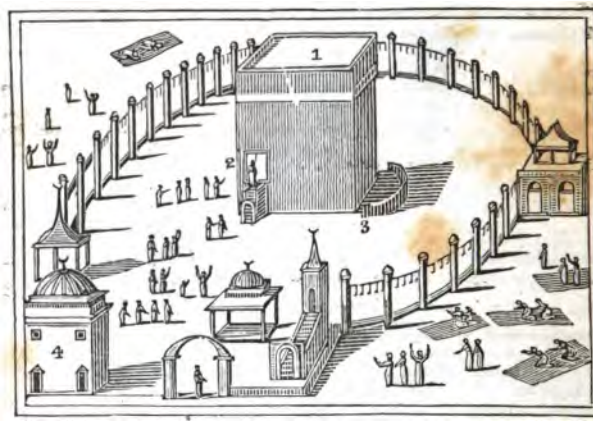
Denominations.	*Chhs.*	*Min's.*	*Where situated.*
Associated Baptists	6,093	3,981	All the states. Two thirds in the southern and western states.
Other Baptists	726	606	
Methodists		2,327	Of 630,000 members, 400,000 were in the southern and western states; 45,000 east of the Hudson river; and the rest in the Middle States.
Presbyterians	2,500	2,070	In the Middle, Southern, and Western States.
Associate Presb.	169	79	
Dutch Reformed	197	167	In New-York and New-Jersey.
Congregationalists	1,250	1,100	Chiefly in New England.
German Reformed	600	180	In Pennsylvania, Maryland, Virginia, North and South Carolina.
Evangelical Lutherans	800	216	
Episcopalians (17 bishops)	700 to 800	648	Chiefly in states on the Atlantic and Ohio.
Quakers	500		Chiefly in the middle states.
Universalists	500	300	
Unitarians	170	150	Chiefly in New England and New York.
Catholics (1 archbishop, 11 bishops)		230	Chiefly in the middle and south-western states. 500,000 to 600,000.
Moravians	33	24	
Swedenborgians	31	25	
Shakers	15	45	In N. England, N. York, Ohio and Kent

992. *The state of religious toleration* varies in different parts of the world. In most Catholic countries, Protestants are not permitted to assemble for public worship, or to enjoy the usual rights of citizens. France is the only Roman Catholic country in which they are admitted to office.

993. *In England, Sweden, and some other Protestant countries*, none but those of the established or prevailing religion can hold offices. In England the established church is Episcopalian, and all other denominations are called dissenters. The number of dissenters is estimated at one fourth of the whole population.

994. *The United States* is probably the only country, where those of all religions enjoy equal privileges.

MAHOMETANS.



Interior Court of the Temple of Mecca.
1. *Caaba*—2. *Place of the Holy Stone.*—3. *Sepulchre of Ishmael.*—4. *Treasury.*

995. MAHOMETANS are those who believe in the Koran, or sacred book of Mahomet, an Arabian imposter, who lived 600 years after Christ, and pretended to be inspired. The Koran teaches the worship of one God, and forbids idolatry; but it requires an idolatrous reverence for Mahomet, and prescribes a pilgrimage to Mecca, his birth-place. The prophet forbade the use of spirituous liquors, and swine's flesh, prescribed circumcision and occasional fasts. He permitted much that Christianity forbids as criminal, and promised to believers a sensual paradise hereafter.

The temple of Mecca is an open court, surrounded by a wall and porticoes. In the centre is the Caaba, containing a black stone, which has been esteemed holy by the Arabs, from an early age

A Mahometan is required to pray five times a day with his face towards the temple of Mecca, always washing before prayer. During the month Ramadan, he is obliged to keep a rigorous fast, abstaining from eating, drinking, and smoking, from dawn to evening. He is also commanded to give alms. To all who faithfully perform these duties, and above all, to those who die in fighting against the enemies of the Koran, Mahomet promised a paradise, where every believer should have thousands of slaves at his command, and every appetite and passion should be gratified.

996. There are *two principal sects of Mahometans*, who differ concerning the right of succession to Mahomet—the Sheas, or Shiites, who are chiefly Persians—and the Sonnites, who embrace the inhabitants of East Persia, Arabia, Turkey and Independent Tartary. The latter form of Mahometanism is the prevailing religion in Northern and Eastern Africa, and many of the countries of Senegambia and Soudan, bordering on the Sahara. There are probably 15 millions of Mahometans in Hindoostan.

997. The *Seikhs*, residing between the rivers Jumna and Indus, who are said to mingle the doctrines of Mahomet with Brahmanism, appear to be in effect Deists.

The Shiites believe that Ali, the son-in-law of Mahomet, and the Shahs of Persia are his rightful successors. The Sonnites claim this honor for Abubeker, the father-in-law of Mahomet, and the Sultans of Constantinople. The Sonnites wear a white turban, and the Shiites one of red woollen.

A new and powerful sect of Mahometans has sprung up in Arabia, called Wahabees, from the name of their founder, who profess to be reformers, endeavoring to restore Islamism from its corruptions. They forbid the idolatrous reverence commonly paid to the temple of Mecca and the tombs of saints; and worship only in the open air.

998. *Mahomet propagated his religion* by the sword, and taught that it was a crime deserving death, and justifying any degree of hatred and oppression, to profess any other religion. *The characteristics of this system*, are gross sensuality—a rigid observance of ceremonies—and a spirit of malevolence towards all but Mahometans. *The sects* are very numerous, and are scarcely less hostile to each other than to Christians and Jews.

The Mahometans use a crescent, or figure of the new moon as their distinguishing emblem, and place it at the top of their mosques, and on their military standards; and hence it is used to designate Mahometan countries on the Chart of the Inhabited World. The priests are called moolahs, or imams; and the chief priest of Turkey, a mufti.

PAGANS.

999. It is estimated that there are 800 or 900 millions of *Inhabitants upon the earth*. Of these, probably about 200 millions are *Christians and Jews*, and about 100 millions *Mahometans*. The remainder, from 500 to 600 millions, are usually called *Pagans or Heathens*.

1000. The *New Hollanders*, some of the *Hottentots*, and a few other tribes, do not appear to have any religious opinions or ceremonies; but far the greater part of the Pagan world practise the worship of images and false gods. There are numberless systems

of Paganism, which have little resemblance to each other, except in their absurdity, idolatry, and immorality; and a minute description of each would require volumes. Only the leading features of Paganism can be given, as it exists in the principal geographical divisions of the world.

Pagan Idols.

1. *Brahmah.*—2. *Budhoo.*—3. *The Chinese Thunderer.*

1001. *The most refined systems of Paganism are found* among the nations of Asia, east of the Belur Tag, and appear to be branches of the ancient *Shamanism.* They teach the existence of a Supreme Deity, called by the Hindoos *Brahmah*—by the Burmans and Siamese, *Boodh*, or *Budhoo*—by the Tibetians, *La*—and by the Chinese, *Fo*, or *Fohi.* They suppose him to be in a state of inactivity; and believe that the world was created, and is governed by numerous inferior deities.

1002. These nations have sacred books, which contain elaborate systems of religion, exhibiting a strange mixture of sublime truths and pure morality, with the grossest absurdities, and the most cruel and wicked rites.

1003. As they believe that the Supreme Deity pays no attention to the world, *the greatest part of their worship is paid* to the inferior divinities. The sun, moon, and stars—fire and water—rivers, mountains and animals, are among their deities; and a deformed idol, or even a shapeless block of wood or stone, is often the object to which prayer and sacrifice are offered. It is not uncommon

for the worshippers to revile or abuse their idols, if they do not obtain what they desire.

1004. *The Guebres or Gaurs* of Persia, anciently called the Magi, worship at the celebrated bituminous ground at Baku, (*See* ¶ 847.) There are several temples in which the flame is always burning, and is believed by the worshippers to be sacred and eternal. Many are found in Hindoostan, under the name of Parsees.

1005. *The inhabitants of Tibet, Chinese Tartary, and the neighboring portions of Siberia*, regard the Grand Lama, or High Priest of Tibet, as the chief object of religious veneration. They suppose him to be animated by the god La, or Fo; and many of the Tartar tribes call him "The everlasting father of heaven." The family now reigning in China, and a large part of their subjects, are his votaries. In China, great veneration is also paid to Confucius, an ancient philosopher of the country and to a number of other inferior deities.

1006. *The Hindoos* worship Brahmah, under a number of forms, in which they suppose he became incarnate, and a multitude of other deities of subordinate rank. They say that they have many millions of gods, some of which are idols of the most deformed and disgusting kind.

The Brahminists are distinguished by their division into various castes, who cannot intermarry, or change their rank or employment. Those who neglect certain religious precepts or rites become Parialis or outcasts, and are treated with more cruelty than beasts.

1007. *The nations of Farther India* are Boodhists, and are not divided into castes.

The Asiatic nations generally believe in the metempsychosis, or the transmigration of the soul after death, into another body. For this reason, the Pagan Hindoos esteem it a sin to destroy the life of any animal, and refuse to eat animal food.

In correspondence with this idea, the worshippers of the Grand Lama believe that when he dies, his soul passes into the body of some child, who is sought for, and placed upon the throne. He is trained up from his infancy by the priests, and is never permitted to speak to his votaries. He appears to be little more than "a living idol," governed by the priests, and proclaimed by them to the people, as the vicegerent of the Deity.

1008. Among *the natives of Western, Central, and Southern Africa*, there are no sacred books, and the systems of religion are of the most absurd character, usually classed under the name of *Fetichism*. Every person selects what he pleases—an insect, a serpent, an egg, a piece of wood or paper, or any other object, the most common or the most disgusting—for his deity, or *fetiche;* to which he offers prayers or sacrifices.

The object of worship may generally be changed at pleasure. Sometimes a whole village or tribe adopt the same fetiche. The

instruments and articles of curiosity made by Europeans, such as anchors, cannon, &c., are often selected as deities by these idolaters.

1009. Combined with Fetichism, we generally find *the worship of evil deities, and a belief in sorcery*, especially among the Barbarous and Savage tribes of Africa, Northern Asia, and Lapland. The evil deities are often most worshipped, from the fear of their anger. Sorcerers are often supposed to possess the powers of a deity, and the same regard is paid to their wishes and commands. Each tribe usually has one or more sorcerers, under different names, who are applied to for the cure of diseases. They are consulted in every difficulty, especially before undertaking any important enterprise; and nothing is usually done without their approbation.

1010. The latter part of this description is also applicable to the *Indians of North America;* but idols are rarely found among them. Their religious services consist of feasts, sacrifices, and incantations; which are practised regularly once or twice a year, and are repeated on important occasions.

1011. *Pagans ascribe* vice and cruelty *to a great number of their deities*, and suppose some of them to be evil beings; and hence they often worship them with wicked and cruel rites, as well as those which are irrational, in order to gain their favor.

1012. *Prayers are generally offered* by their priests; and they believe the merit to be proportioned to their number. The prayers often consist of mere repetitions of the name of the deity. The Tartars write them on slips of parchment and hang them in the wind, or fasten them to a small wind mill, supposing that every motion serves as a repetition of the prayer.

1013. *The ceremonies of worship* are usually absurd and superstitious; and often grossly indecent or vicious. The Hindoo temples are stained with pollution and vice, scarcely found among the most abandoned class of men in Christian countries.

The sacrifices are usually animals, food, money, ornaments, &c. according to the supposed disposition of the deity or the wants of his priests. But human sacrifices were formerly universal among Pagan nations; and are still practised in Hindoostan, Africa, New Zealand, and other islands of the Pacific, and among some of the Indians of North America.

In Mexico, 20,000 victims were formerly offered to the sun every year. Even in ancient Britain, the country of our ancestors, Woden and Thor, and other imaginary deities, were formerly honored by human sacrifices. In Africa, especially in Ashantee and Dahomey, several thousands are sometimes killed on the grave of a king; and great numbers on other important occasions. In Polynesia, the human victim is sometimes devoured by the worshippers.

1014. Numerous *penances and superstitious rites* are observed

Worship of the Grand Lama.

Idol Worship in Tonkin.

A Widow on the Funeral Pile of her Husband.

Catholic Procession.

Catholic Mission at Monterey.

Japanese trampling on the Cross.

P. 193.

among Pagans to obtain forgiveness of their sins. *The Hindoos* bathe themselves and their dying friends in the sacred rivers, Ganges, Indus, and Kristnah, believing that their waters wash away sin. For the same purpose, they undertake long and painful pilgrimages, and often inflict the most severe tortures on themselves.

Some sit or stand for years in the same position, until they are stiffened—others broil before a fire, or lie on beds of spikes—others are sawn asunder, or throw themselves under the wheels of an idol's car, which crushes them to death. They believe that by some of these practices, a man may at length become superior to the deities. Widows are even required to burn themselves on the funeral pile of their husbands, and thousands were burnt alive annually in Hindoostan. This practice is now forbidden by the British Government in India.

1015. *The standard of morality among Pagan nations*, is of course very low. Vices which are ascribed to deities, or practised in their worship, cannot be forbidden to their worshippers, and murder, theft, impurity, &c. are scarcely considered sins.

In China, Hindoostan, the Pagan islands of Polynesia, and in some tribes of the North American Indians, infants are allowed to be destroyed. Other nations expose or kill their parents and friends, when they become sick or infirm. The New-Zealanders, and some of the tribes of Africa and South America, feed on human flesh. In short, there is scarcely any crime which man can perpetrate, which is not a part of the worship of some Pagan religion, or allowed by its precepts.

1016. The following table will show the comparative numbers of each religion according to several estimates.

TABLE OF THE INHABITANTS OF THE WORLD ACCORDING TO RELIGION, FROM DIFFERENT AUTHORITIES.

	Malte Brun.	Graberg.	Pinkerton.	Hassel.	Balbi.
Catholics	116,000,000			134,000,000	139,000,000
Greek Church	70,000,000			62,000,000	62,000,000
Protestants	42,000,000			55,000,000	59,000,000
Total Christians	228,000,000	236,000,000	235,000,000	252,000,000	260,000 000
Jews	5,000,000	5,000,000	5,000,000	3,930,000	4,000,000
Mahometans	110,000,000	120,000,000	120,000,000	120,105,000	96,000,000
Brahmans	60,000,000	60,000,000	60,000,000	111,353,000	60,000,000
Boodhists &c.	150,000,000	150,000,000	180,000,000	315,977,000	170,000,000
All other Pagans	100,000,000	115,000,000	100,000,000	134,490,000	147,000,000
Total Pagans	420,000,000	445,000,000	460,000,000	681,925,000	473,000,000
Total inhab'ts of the Globe	653,000,000	686,000,000	700,000,000	938,421,000	737,000,000

CHRISTIAN MISSIONS.

1017. The Pagan nations of Europe were early converted to Christianity by the agency of the apostles, and other missionaries from Judea; and in later ages, the practice has been continued of sending missionaries to Pagan nations, who have been in some degree successful in enlightening and reforming them.

1018. *Roman Catholics* have uniformly established missions in all the countries which they have colonized in Asia, Africa, and South America. But they have usually neglected, or forbidden the use of the Scriptures; and have too generally given little instruction, except in the ceremonies of their worship.

1019. The *Africans* of some kingdoms of Lower Guinea and Zanguebar, have become professed Catholics, under the instruction of the Portuguese priests, and have erected a number of churches. But they appear to know little of the principles of Christianity, and retain nearly all the superstitions and vices of Paganism.

1020. The *Indians of South America*, who are under the control of the Spanish and Portuguese, are compelled to profess the Roman Catholic religion, but are usually in the grossest ignorance of religious truth. Some of the South American tribes embraced Christianity under the care of the Jesuits, who combined religious instruction with other useful knowledge, and the arts of civilization. A few of these tribes attained a considerable degree of improvement; especially those of Paraguay, who now form an independent, civilized community.

1021. The *Moravians* were the first Protestants who sent missionaries to instruct and civilize Pagan nations; and have been distinguished for their zeal and labors. Their example has been followed by the Baptists, Methodists, Episcopalians, Presbyterians, and Congregationalists of Germany, Great Britain, and the United States, and to some extent by the Danes and Swedes.

1022. *Protestant missionaries* have uniformly carried the Scriptures to those whom they design to teach, and have translated them into numerous languages, some of which were never written before. They have in many instances established printing presses, for printing the Scriptures and other useful books. They have also instituted schools, for giving instruction in all branches of useful knowledge, as well as in religion and morals. In Hindoostan alone, there are 50,000 children in the missionary schools, among whom are many females, who were never before allowed to receive instruction. There is probably a greater number in other parts of the world.

1023. Only 1131 Protestant missionaries are even now employed among 500,000,000 of Pagans; yet their efforts have been attended with some success.

The *missions in Hindoostan* have led considerable numbers to an enlightened profession of Christianity. Among the *North American Indians*, several tribes in Massachusetts and New York have been civilized and christianized, by the efforts of missionaries; and great advances have been made towards the same object among the Cherokees and other southern tribes.

1024. Many villages of *Greenlanders*, *Esquimaux*, and *Hottentots*, have been reclaimed from their idolatrous practices, and savage mode of life, chiefly by the agency of the Moravians.

The *Society Islands*, which were distinguished 50 years since for their abandoned vice and cruel superstition, have been led, by the instruction of English missionaries, to renounce their idols, and give up human sacrifices; and are now equally distinguished for the apparent purity of their morals, and their regard for Christianity. The *Sandwich Islands* are now following their example, under the influence of American missionaries, and 52,000 children are taught in the schools.

1025. The following table exhibits the number of Protestant missionaries, teachers, and stations, in different parts of the world. Most of the missionary stations will be found marked upon the maps belonging to the work.

Of 1131 missionaries and teachers, 570 are employed by the missionary societies of England; 165 are sent by the London society, 200 by the Wesleyan Methodists, 140 by the Church Missionary Society, and 85 by the Baptists American Societies employ 323, of whom 234 are under the care of the American Board of Commissioners for Foreign Missions. 63 are Wesleyan Methodists and 23 Baptists.

TABULAR VIEW OF PROTESTANT MISSIONS, IN 1833.

Countries.	Stations.	Missionaries.	Assistants.	Scholars.
Western Africa, (Eng. Germ. & Amer. Missionaries)	15	22	37	3,284
South Africa, (Eng. Morav. and Germ. Miss.)	49	73	30	4,560
African Islands, (English Miss.)	3	4	3	3,000
Egypt and Abyssinia, (English Miss.)	3	6	1	
Syria and Turkey, (Eng. and Amer. Miss.)	5	11	11	
Greece, (Eng. and Amer. Miss.)	2	5	4	
Countries near the Caucasus, (Germ. Miss.)	3	10	3	
Siberia, (Eng. Miss.)	3	3		
China, (Canton, and Macao, Eng. and Amer. Miss.)	2	2	2	
India beyond the Ganges, (Eng. and Amer. Miss.)	9	17	12	699
Hindoostan, (Eng. Amer. and Scot. Miss.)	91	107	498	1,913
Ceylon, (Eng. and Amer. Miss.)	25	29	156	9,353
Indian Archipelago, (Eng. and Neth. Miss.)	10	25		
New Holland, and New Zealand, (Eng. Miss.)	10	12	38	847
Sandwich Islands, (Amer. Miss.)	10	22	37	52,882
Other Islands of Polynesia, (Eng. Miss.)	38	14	41	9,707
Guiana, West Indies, (Eng. Mor. and Scot. Miss.)	118	160	339	83,272
North American Indians, (Amer. and Morav. Miss.)	50	77	146	6,161
Labrador, (Moravian Miss.)	4	17	11	
Greenland, (Moravian Miss.)	4	16	9	
Total,	454	632	1378	275,678

MISSIONARY SEMINARIES.

1026. A number of literary institutions have been formed expressly for the purpose of educating young men as missionaries; of which the following are the principal.

	Students.		*Students.*
Gosport (Eng.)	25	Malacca	
Hackney		Serampore	
Basle (Switz.)	40	Calcutta	
Barkel (Neth.)	16	Sierra Leone	
Berlin (Sax.)			

1027. The institution at Calcutta is an Episcopal College, founded by the Bishop of Calcutta. That of Serampore is under the direction of the Baptist Missionaries, and has produced numerous translations of the Scriptures.

LEARNING.

1028. *The state of learning* in a country is an important index of its state of society, and is intimately connected with it. It depends much on the means enjoyed for preserving and communicating knowledge.

1029 *Savage and Barbarous nations*, have no adequate substitute for written language. The memory of past events, and the stock of knowledge they have acquired, are handed down

from father to son only by tradition. Public as well as private recitations, of their history, religion, and laws, are often holden for this purpose.

1030. Among the *North American Indians*, there are annual meetings, or "talks," in which the elder members of the tribe, communicate this information to the younger. Their narratives are impressed on the memory by the use of belts of wampum—scalps—the presents received from allies—or other objects emblematical of peace and war, or associated with their history; which are carefully preserved by the keeper of the records.

1031. Among the *Tartars*, and many other barbarous tribes, a particular class of men are devoted to this employment; like the ancient bards of Britain. The same practice is also adopted in *other nations* where books are scarce; as in Arabia and Iceland.

In Arabia, these persons frequent coffee houses, and other places of public resort, and collect a crowd, whom they entertain for hours with recitations of poetry, history, or tales, for a trifling gratuity. This custom exists in Italy also; and some of these public orators, termed "Improvisatori," are in the habit of reciting extemporaneous poetry, on any subject assigned, or addressed to some one of the audience.

1032. In addition to the want of written language, *the wandering and irregular life of Savage and Barbarous tribes*, is an insurmountable obstacle to their progress in learning. In Arithmetic, many tribes cannot count beyond ten; and none are acquainted with mathematical principles or rules. They have no instruments for gaining an acquaintance with Astronomy or Natural Philosophy; their knowledge is here limited to the stars which direct their wanderings, and the indications of the weather and seasons, in which they often exhibit much observation and skill. They have usually no communication with distant nations, and are entirely ignorant of Geography and General History.

1033. *In Half-Civilized and Civilized nations*, we find in the use of written language and books, the only adequate means for the preservation and diffusion of knowledge, and its state is generally proportioned to the improvements made in this respect.

1034. In the Half-Civilized nations of *Northern Africa, and Western Asia, and in Hindoostan*, books are entirely in manuscript, written on rolls of parchment, or sometimes in India on the leaves of trees. The labor of months is necessary to produce a single copy of a work. Only a small number therefore can be furnished—few can afford the expense—and the attainment and diffusion of knowledge is slow and difficult

1035. The *Chinese, Japanese, Burmans, and Siamese*, print books from engraved blocks of wood; one of which must be prepared for each page, and can be used for no other. This invention renders it much more easy to multiply copies of a single work; but the art is still very imperfect, and the labor and difficulty of publishing new works is so great, as to form a serious obstacle to the advancement of learning.

1036. Although *Half-Civilized nations* are much advanced beyond Savages in knowledge, the *sciences* can scarcely be said to exist among them. *Arithmetic*, and some other branches of the *Mathematics* are understood, especially in Hindoostan; and the invention of the arithmetical figures is ascribed by some to the Hindoos, and by others to the Arabians. *Astronomy* is partially understood in China and Hindoostan; but is chiefly used for astrological purposes, in determining the time when the state of the heavens is propitious for the commencement of any important undertaking, or the performance of a ceremony.

1037. *Arabia* was distinguished in early ages as the seat and source of science, and some other Half-Civilized nations were once the most enlightened in the world; but in all these countries, the improvements and discoveries of Civilized nations are either unknown or disregarded, and knowledge is stationary.

1038. The *Hindoos, Siamese, and Burmans*, have a large number of works of poetry, theology, and jurisprudence, some of which are very respectable for their literary character.

1039. *Among Civilized nations*, the progress of knowledge has been promoted to an extent almost incalculable, by the improvements in the *art of printing*; and to this in a great measure, is to be ascribed their superiority in learning and science. Instead of the blocks of the Chinese, movable types, cast in metal, are employed, which may be easily composed and recomposed for a variety of pages and books in succession. A small collection is sufficient to print any number of works. The copies may be multiplied to an indefinite extent, and with astonishing rapidity, at so cheap a rate, as to bring them within the reach of a large part of the community.

By the invention of *stereotype plates*, or metallic blocks cast from the movable types, standard works may be perpetuated at a very moderate expense. By the still later invention of steam presses, a thousand copies of a single newspaper, or other sheet, may be thrown off in an hour; and the press seems to rival the rapidity of speech. *Lithography*, or the art of printing from a manuscript written on stone, is a more cheap and easy means of diffusing information to a limited extent, than printing itself.

1040. Civilized nations are not less advanced in *knowledge* than in the modes of communication. By means of written and

printed records, every quarter of the globe, and every age of the world, is open to the examination of the learned. The immense collection of facts from all countries and nations, has laid a foundation for the principles of science; and the numerous instruments devised, extend its discoveries beyond the limits of our senses. The Astronomer explores regions of space which others cannot see. The Philosopher and the Chemist, carry their researches into the bowels of the earth, and the pores of matter; and the most subtle fluids are subjected to the examination and control of man.

1041. *The comparative state of knowledge in Civilized countries depends* much on the character and spirit of the government and religion.

1042. *In absolute governments, and in countries where the distinctions of rank are very great*, the common people are usually degraded and deprived of freedom, and the mass of the nation are involved in great ignorance. At the same time, learning is often patronised by the government, and a class of learned men are highly distinguished. This is the fact in France, Prussia, and some other parts of Europe.

The despotisms of Asiatic nations are eminently prejudicial to the diffusion of knowledge among the people; as may be seen in Turkey and India.

1043. In countries where there is less distinction of rank, and *where the common people are free*, knowledge is generally diffused among them; as in Sweden, Norway, Denmark, and the United States. In some countries of this character, learning and science are carried to the highest pitch of improvement; as in Scotland.

1044. *The religion* of a country also has great influence on the state of information; and in some instances, its very existence depends on the ignorance of the people. Thus most systems of *Paganism*, even that of the Hindoos, are contradictory to the principles of science, and therefore the priests forbid the acquisition of this knowledge, in order to maintain their own authority.

1045. *The spirit of Mahometanism* leads its disciples to fear, reject, or despise the knowledge possessed by those of other religions: and hence they generally make no advances in science.

1046. *In Catholic countries*, the progress of philosophy and natural science has been checked by the prevalence of superstition. The Italian philosopher, Galileo, was punished for teaching the true system of Astronomy.

The perusal of the scriptures, is also forbidden to the people, in most Catholic countries; and in this way, one of the most impor

tant sources of knowledge, and one of the strongest motives to its acquisition are taken away. The same prohibition is extended to a large number of other books, among which are some of the best extant; because they are supposed to counteract the influence of the Catholic religion.

1047. *In Protestant countries* freedom is permitted in religious opinions and inquiries. The Bible is generally circulated among the people, from which all classes learn their duties and their rights. This has led to the establishment of more free institutions; it has diminished the power of the higher classes over the lower; and afforded to all, the motives and means for improvement.

1048. From the operation of these causes, *the diffusion of knowledge in civilized countries, will be found proportioned* to the freedom of the people. It is greatest where the government is most free, and where the Protestant religion prevails. It is least where the freedom of the people is abridged, or the progress of inquiry prevented by the restraints of superstition. Those countries also have generally made the greatest advances in *science*, (other things being equal,) where the greatest political freedom has been enjoyed. Evidence of these facts will be found in comparing England with Spain, Sweden with Poland, and the United States with Mexico.

1049. The joint influence of an absolute government and the Catholic religion has prevented the advance of knowledge in *Austria, Poland, Italy, Spain, Portugal*, and the *Spanish and Portuguese colonies*, in America. Science is by no means in its best state. Many of the opinions of a former age are retained; the improvements of the present are neglected; and little progress is made or attempted.

Since the Spanish and Portuguese states in America have become independent, great exertions have been made for the promotion of science and education. Their progress must necessarily be slow, from the prejudices of the people, the poverty of the governments, and the want of competent instructers.

1050. *Italy* is celebrated for important discoveries and literary characters; and still has a respectable number of learned men; but at present, it appears to contribute little to the promotion of knowledge. It is certainly not advancing with the progress of the age.

1051. *Poland and Austria* were formerly respectable for their literature, and that of Austria has still some reputation. But the nobility of these countries too generally neglect or despise learning; and the restraints of superstition, and a despotic

government, prevent its progress among the people. Neither Poland nor Austria, can be considered as having taken rank among scientific nations.

The *Catholic states of Germany* are generally far below the Protestant states around them, in the extent and diffusion of knowledge.

1052. *Russia* was in a state of barbarism 100 years ago; but the late emperors have invited and patronized scientific men from other countries. All the sciences of other nations are now understood and cultivated, in the universities and principal towns; and are constantly extending through the empire. This nation seems to claim a higher rank, than those in which science is stationary or declining, although the mass of the population are grossly ignorant.

1053. Among the Protestant countries of Europe, *Norway* is excluded from the class of scientific nations, in some measure by its situation, which imposes on the people an unusual amount of labor in procuring a support.

1054. *Denmark and the Netherlands* were formerly distinguished in science, but have declined in this respect, as well as in general prosperity. They appear to be again rising to respectability.

Sweden has been distinguished for scientific men, especially in the branch of Natural History.

1055. Perhaps no portion of the world is more eminent for its literature and science than *Germany;* and probably none can boast of so large a class of learned men and authors. They are unrivalled for the extent and accuracy of their researches in Languages, Geography, Chronology, and Antiquities. Prussia Proper holds a high rank, both for its literature and science; although they are of more recent origin than in most parts of Germany.

1056. *Great Britain and France* have been most distinguished, for many years, in scientific discoveries; and they yield to no country except Germany, in any branch of learning.

1057. The people of the *United States* enjoy every facility for the acquisition of knowledge, which the ease of gaining a support, and the perfect freedom of political and religious institutions can give. Liberty of opinion and inquiry, as well as of speech, is unrestrained, when it does not endanger the welfare of society. Except in the unfortunate and degraded class of slaves, there are no distinctions of rank, to prevent the improvement of the people. In most states, every man has a voice in the election of his rulers, and is induced to acquire information to direct his choice. The way to office is open to all, and education secures respectability.

The means of knowledge are also easily accessible. Books are numerous; and newspapers and periodical publications abound, which are circulated through the Post-Office, to every part of the Union, at a very cheap rate. The means of support are so easily procured, that few are in that distressing state of poverty, which depresses so large a portion of the community in Europe.

The constant communication which is maintained with European nations, puts us in possession of all their most valuable knowledge and recent discoveries; which soon spread through every part of the country. But the state of society and wealth, has prevented the foundation of those magnificent libraries, and public institutions, for the support of learned men and the prosecution of scientific discoveries, which are so numerous in Europe. While knowledge is diffused much more extensively among the people, the number of our learned men is far less. Most of these are so devoted to the instruction of youth, or the active employments of life, as to leave little opportunity for the prosecution of literary research, or scientific discovery.

INSTRUCTION.*

1058. *In Half-Civilized and Civilized countries* various *institutions* are established for the diffusion of knowledge.

Primary Schools, are designed to give instruction in the elementary branches—reading, writing, and arithmetic. *Academies*, *Lycea* and *Gymnasia*, furnish instruction in the languages, and the elements of Science; and Colleges pursue the same course somewhat farther.

1059. *Universities* are designed to furnish a complete course of instruction in all the branches of science and learning; and their character of course varies, with the state of knowledge in the country where they are found.

Besides these institutions, there are others devoted to particular branches—as the Military and Naval Schools—and the Schools of Medicine, Theology and Law. The general diffusion of knowledge depends chiefly on the state of Primary Schools.

1060. It is the remark of an European writer concerning the *United States*, that, "the great body of the American people is better educated, than the bulk of any European community."

In addition to the influence of the causes before mentioned, schools also are numerous, and instruction may be obtained at an expense comparatively small. In many of the United States provision is made by law for the support of schools, either by the appropriation of a fund, or the imposition of taxes.

* Education includes instruction, and much more than is usual in our schools.

1061. *The Eastern, or New-England States*, are peculiarly favored with means of instruction of this kind. The people are thickly settled in towns and villages. Every town is divided into districts, each of which is obliged to support a school during the whole, or a part of the year; and it is rare to meet with a native of these states, who cannot read and write. Academies are also numerous; and the private classical highschools, are frequented by pupils from distant states.

1062. *Connecticut* has a fund of $1,900,000 for the support of schools, and thus distributes to the people a greater amount annually for the instruction of their children, than they pay for the expenses of the state government.

1063. *The Middle States* have been subject to a great influx of emigrants from Europe of the laboring class, many of whom are of course ignorant, and have entailed this misfortune upon their families, by neglect. The state of instruction is much *inferior* to that of New-England, on this account. The prevalence of the Dutch and German languages in some parts of New-York, New-Jersey, and Pennsylvania, has also been an obstacle to the improvement of the people.

1064. The State of *New-York* has united all public literary institutions into one body, under the name of the University. It has a fund of $1,600,000 for the support of common schools, under the direction of the Regents of the University; and in *1830*, it was found that all the children received instruction. This state has a distinct fund of 100,000 dollars, for the encouragement of literature, which is appropriated to colleges and academies at the discretion of the Regents.

1065. *Pennsylvania, New-Jersey, and Delaware*, have also made some provision for public instruction.

1066. *In the Southern States*, the people generally live on extensive plantations, or in settlements spread over a large tract, so that it is difficult for a sufficient number to unite, for the establishment of institutions for literary and religious instruction. On this account the means of instruction are not easily procured, except by the rich. The slaves of these states are rarely taught, even to read; and in many parts of the country, it is considered dangerous to give them any instruction.

1067. *Virginia* has established a fund of more than a million of dollars for the purposes of instruction, from which $45,000 are annually appropriated to common schools. *Maryland, Georgia, and South Carolina* also make some provision for schools.

1068. *The Western States* have been so recently settled, and are yet so thinly populated, that it is difficult to establish and support the means of instruction, and even to obtain competent

teachers, either literary or religious. In most of these states, however, a portion of land has generally been reserved by congress for the purposes of instruction. A fund is thus provided for the promotion of knowledge, which may be employed with the most salutary effect, when the state of the country shall render the sale of these lands advantageous. In Missouri, Ohio, Indiana, and Illinois, $\frac{1}{36}$th of each township is devoted to schools, besides an appropriation for the establishment of colleges.

1069. *Among the nations of Europe, the best state of general instruction is found* in the northern countries, in Germany and Switzerland. In Sweden, Norway, Denmark, Scotland, Switzerland, and Hanover, instruction is given by means of *parish schools*, resembling those of New-England, established in almost every village. The means of support are provided by law; and the poor are taught gratuitously, or on the easiest terms. In Switzerland, not one in sixty is ignorant of writing, and few, comparatively, in any of these countries. In the Netherlands, the system is not carried into full effect, and the state of instruction is much inferior to that of Scotland, although conducted on the same plan. Denmark and the German states have *institutions for the education of teachers;* and in Norway and the Netherlands, no one can instruct without a regular license.

1070. *The Protestant States of Germany* are distinguished from the Catholic, by the superior instruction of the people. Those of Saxony and the Saxon States, and Prussia, are most advanced, and resemble the nations just named. In *Bavaria*, schools, academies, and colleges have been multiplied by the last and present reigning sovereign, and the youth of both sexes are carefully instructed. The sovereigns of *Wurtemberg*, *Baden*, and *Nassau*, have also paid much attention to the instruction of the poor, and a perceptible improvement is taking place in these states. In *Hesse Cassel* none but the sons of noblemen, counsellors, and other officers, and the eldest sons of clergymen, are allowed to receive a learned education. *Austria* was formerly far behind the north of Germany in regard to this subject; but the government have established schools, and elementary instruction is now generally diffused.

1071. In *Iceland*, the instruction of the young is entirely domestic; the mother teaches reading, and the father writing and arithmetic. This country was anciently among the first in Europe for literature; but books have long been very scarce among them. They are highly valued however; and there is perhaps no country where a greater proportion of the inhabitants are accustomed to read and collect information from books.

It forms the occupation and amusement of the long nights of winter. Travellers have been surprised, to find the humblest peasants possessed of extensive knowledge in history and classical literature

1072. Although *England* is highly distinguished for its schools of science and literature, it ranks below the countries which have been mentioned, in the general diffusion of knowledge.

In some countries, not more than one half or one third of the population are instructed. A system of schools of Mutual Instruction, on the plan of Bell and Lancaster has been established within a few years, which promises at length to extend the advantages of common education to the whole community. Sunday schools and infant schools, have also been extensively established, which will greatly aid in this object. In *Wales*, there are not schools for one half of the children. In the whole of England, there are schools for only 7 millions of the people, leaving two millions destitute, and 3 millions with only the instruction of a Sunday school. The northern counties are best supplied.

1073. In *Ireland*, the mass of the people are involved in the grossest ignorance. In some parts, not one in 500 receives instruction. A large number of the Irish use their own peculiar language, in which there are few books. Even the bible could not, until recently, be obtained in this language by the common people. The same is true of some parts of the highlands of Scotland, and of many of the islands on the coast of Great Britain. One of the strongest motives to the acquisition of knowledge is destroyed by the Catholic priests in Ireland, who prohibit the people from reading the scriptures.

1074. In *France*, a large part of the children are without instruction, and several millions of the people are unable to read and write. Many schools and seminaries for the education of teachers have been established of late years, and much has been done to promote the diffusion of knowledge. In 1822, only 800,000 children were receiving instruction in a population of 28,000,000. In 1833, there were 1,600,000 in the primary schools, in a population of 32,000,000.

1075. No efficient system of instruction for the poor exists in *Russia, Poland, and the southern countries of Europe;* leaving more than half the population of this enlightened quarter of the world without the means of acquiring knowledge.

1076. In *Russia* and *Poland*, the state of vassalage or slavery, in which a large part of the population are involved, leaves no motive or opportunity for mental improvement. In Russia, schools have long existed in the large towns, and spread a feeble light over a part of the population; but the inhabitants of the

villages and open country, are almost as ignorant as the savage tribes of Africa. The late emperor established a great number of schools for the instruction of the peasants, but their effect is not yet felt to any important degree.

1077. In *Spain* and *Portugal*, there has been no provision for the instruction of the lower orders until recently. Schools are generally ill conducted, and knowledge at a low ebb. Portugal once established the system of Mutual Instruction, and 5,000 pupils were taught on this plan in 1820. The mass of the people in the south of *Italy*, are in a state little better than the Spaniards; but in the northern parts, there is much more information among the lower classes, and they partake of the intelligence as well as the industry of their Swiss neighbors.

1078. In the *Portuguese and Spanish colonies in South America and Mexico*, the people are less instructed than in the mother countries. The people are grossly ignorant, and schools are almost unknown. Efforts are now made to promote education in the countries which have become independent, and Lancasterian schools are already commenced in Buenos Ayres and Colombia. The former government forbade the study of the sciences to the Mestizoes, and all others except the children of Spaniards.

1079. The *Greeks* of European Turkey formerly enjoyed few advantages for instruction; but one of the first acts of their congress was to establish schools; others have been formed by foreign aid; and there is every reason to expect that knowledge will be generally diffused among them.

1080. In the *Mahometan countries*, Turkey, Arabia, Persia, East Persia, and Northern Africa, it is considered very important to read the Koran. A considerable portion of the people are taught to read and write the Arabic in which it is written; but it is not thought necessary to understand it, and the language is spoken only in Arabia. Hence the knowledge which is gained is small, and even this is not usually extended to the lower classes.

There is usually a school near every mosque, often founded by charity; and instruction is every where given by the moolahs, or priests.

In *Persia*, great attention is paid to the knowledge of manners, and the forms and compliments of society.

In *Cabul*, there is a schoolmaster in almost every village, who is maintained by an allotment of land, and a small contribution from his scholars; but they read to a great extent without understanding, and not one quarter of the lower classes can read their own language.

1081. *The Mahometan Tartars* of Eastern Russia, adopt a similar course, and one-fifth of the people, as far east at Astrachan, are able to read. Among the Moors of the African deserts, the children are taught to trace the letters of the Koran in the sand, thus learning to read and write at the same time. The plan of mutual instruction, which is the fundamental peculiarity of the British schools, has long been practised here.

1082. In *Hindoostan*, schools are numerous, and children are taught at a small expense, on the same plan. They usually begin at five years old to write in the sand, and afterwards on palmetto leaves with a reed pen. A number of schools have been established by Christian Missionaries, in which many are receiving a course of elementary instruction, together with moral and religious knowledge.

1083. In *China*, schools are established in almost every town and village, and a large part of the people are taught to read and write, sufficiently for the common purposes of business. The poor have no other knowledge than is necessary to follow the profession of their fathers. A Chinese treatise on the education of the higher classes, styles 'religion, music, archery, horsemanship, writing, and accounts,' the essential points of knowledge.

1084. *The Japanese* also have numerous elementary schools, and appear to be among the best educated people of Asia. Gymnastic exercises are taught; and domestic economy, and the history of their own country, are deemed indispensable to a good education. Almost all can read and write. Copies of the laws are put up in public places, so that all may become familiar with them.

1085. In *Siam and Burmah*, the children of the higher classes are placed in the convents of the Talapoins, or monks, to learn reading, writing, and accounts; and are taught precepts of morality, combined with lessons in the practice of cunning and fraud. Many of the lower classes are also taught to read.

1086. *Java, and the Asiatic Islands* generally, are characterized by the want of instruction; many of the chiefs, even in this advanced state of society, being unable to read and write. The fierce, barbarous character of the *Malays* leads to a similar state of things among them. It is scarcely necessary to state, that among the Savage and Barbarous nations of Australia, Polynesia, Africa, and America, instruction in the use of books is unknown. Songs and tales relating to their history, or fables, are the only subjects of intellectual instruction.

1087. The present Bashaw of *Egypt*, appears anxious to diffuse knowledge among the higher classes. For this purpose

he has founded important public institutions, has procured European teachers, and provides for the instruction of a number of youth.

(II.) LITERARY INSTITUTIONS.

1088. *Universities* generally furnish a complete course of instruction in Classical Literature, Mathematical and Natural Science, and in Law, Theology, and Medicine. They are usually provided with extensive libraries, philosophical and chemical apparatus; collections of minerals and anatomical preparations, and botanical gardens.

1089. *The colleges and universities of Europe* differ materially from those of the United States. They are rather places of study for such as wish to acquire knowledge. Scarcely any control or care is exercised over the character and conduct of the students, and their efforts are chiefly voluntary.

1090. *In the universities of Germany*, the whole instruction is given by professors divided into four faculties—Theology, Law, Medicine, and Philosophy; the last including all subjects not comprised in the three preceding. The professors are appointed by government, which pays them a regular salary. Each chooses the subject of his lectures from the branches of his own faculty, and delivers as many courses as he thinks proper. The students attend such lectures as they please, and pay a small fee to the professor. They are not subject to any discipline or examination in the pursuit of their studies.

Degrees are given only to such as undergo a public examination, and hold a disputation on such subjects as they choose, with the learned men of the university. Dissipation and vice unhappily exist to a great extent, although rigorous laws exist, designed to guard against them. Still a considerable number of students are distinguished for their intense application to study.

There are twenty-eight universities in Germany. Those of Gottingen, Leipsic, Berlin, and Halle, are the most distinguished. Vienna and Prague are the best Catholic Universities.

1091. *In the Gymnasia*, or higher schools of Germany, a thorough course of instruction is given, which [illegible] resembles that of American Colleges.

1092. *Most of the universities of Europe* are conducted on the plan of those in Germany.

Norway has a literary institution of distinction at Christiana. The two principal universities of *Sweden* are at Upsal and Lund. That of Upsal is celebrated for the learned men educated in it. There are also twelve gymnasia, or classical schools in the kingdom, supported by government.

Denmark has universities at Copenhagen and Kiel. Copenhagen is the great centre of literature and science. Kiel has a celebrated observatory. There is also a college at Odensee; and 50 classical schools are supported by the crown.

1093. *The Netherlands* have six universities, at Leyden, Utrecht, Groningen, Louvain, Ghent, and Liege, which have long been celebrated. There are also seven other institutions, called Athenæ, at Amsterdam, Brussels, and other large towns, which differ from universities only in not conferring degrees.

1094. *Prussia* has six universities—at Berlin, Halle, Bonn, Konigsberg, Breslau and Greifawald.

Austria, has universities at Prague, Pest, Lemberg, Vienna, and Innspruck, which have not attained a high rank; and there are several in Austrian Italy. Those of Vienna and Prague are the principal.

1095. *Switzerland* has colleges at Berne, Zurich, and Lucerne, and universities at Geneva and Basle. The university at Geneva has been very celebrated for its learned men. Switzerland was also the seat of the celebrated institution of Pestalozzi, and still is of that of Fellenberg, in which the most valuable improvements in education have been devised. In the latter, mechanical and agricultural employments have been connected with literary pursuits.

1096. *In Russia, there are universities* at Abo, Petersburg, Warsaw, Kiew, Moscow, Wilna, Dorpat, Charkov, and Kazan, in which the sciences are well

taught. Those of Abo, Petersburg, Kiev, and Moscow, are the principal. The teachers of science in Russia have generally been foreigners, who have been sent for, or patronized by the emperor. *Petersburg* contains a number of institutions for naval, military, scientific, legal, and theological education. At *Odessa* is a college, established by the Greek merchants of that city. In 1820, it contained 350 youths, who were instructed in the Greek language, and in all branches of science, by professors of their own nation.

There are also many *academies and colleges* established in Russia, for giving a superior education; but the system is not in full operation. About 9000 young men were educated at the expense of government in 1820, and a degree from a university is now necessary to obtain many public offices.

1097. In *Italy*, there are universities or colleges in most of the large cities—Rome, Naples, Bologna, Venice, Florence, Mantua, Padua, Parma, Pavia, Genoa, Turin, Milan, Palermo, &c. Bologna is among the first, and most richly furnished with professors. Some of these universities are rather collections of schools, intermediate between the German Universities and Gymnasia.

1098. *Spain* has fifteen universities, but in a low state: the principal of which is at Salamanca. The modern improvements in science are not taught. Latin, and the scholastic logic and theology of the seventeenth century, are the principal subjects of attention. The universities of *Portugal*, at Coimbra and Evora, are in a similar state.

1099. In *Brazil*, there is scarcely the appearance of literature or education. The institutions of the *Spanish colonies in America* are much like those of the mother country, except that the practical sciences, important in the working of the mines, are more attended to. Santa-Fe de Bogota has a university, with two well-endowed colleges, and a good library. Lima, Quito, Caraccas, Guamanga, and Santiago have also universities.

Mexico is distinguished for its valuable establishments for the promotion of science. A university has recently been established at Cordova, in *La Plata*, and a college at Buenos Ayres, with a state library of 20,000 volumes.

1100. In *France*, all institutions for education are subject to a board of officers, styled the University of France. The kingdom is divided into 26 territorial divisions, called academies, corresponding to the divisions of the courts of appeal, in each of which is one or more faculties. These places of education are divided into primary and secondary schools, lycea, colleges, &c.

There are no institutions in which all the branches of knowledge are taught; but the institutions of Theology, Law, Medicine, and Science, are separated. Each diocese has a theological school of three professors. There are two law-schools of five professors, and five medical schools of nine professors. The principal are at Paris, Montpelier, and Strasburg. There are also distinct institutions for the mathematical sciences and literature. All these have the power of conferring degrees in their own departments.

1101. *The Lycea and Colleges of France*, are schools of science and classical literature, like the German gymnasia, and corresponding very nearly to our colleges in their influence. Dancing and Music are among the branches of instruction.

In addition to these, there are military schools—schools for the blind—for the deaf and dumb—for geography—for the oriental languages—and for instruction in various arts important to the public service—the building of bridges, preservation of forests, &c.

1102. *In Scotland, the university of Edinburgh*, is one of the most celebrated medical schools in the world. Instruction is here given, as on the continent, entirely by lectures, and the attendance of the students is voluntary. *The Scotch universities at Glasgow, Aberdeen, and St. Andrews* have more resemblance to American Colleges; but only six or seven months in the year are devoted to instruction.

Aberdeen contains two distinct Universities, King's College, and Marischal College.

Examinations, as well as lectures, are held on every subject; the conduct of the students is attended to; and a weekly meeting held for account and censure

The students formerly resided in the college buildings, and lived at a common table; but this plan has been abandoned. Degrees are given on examination, after a full course of study.

The Divinity School of Aberdeen, is formed of professors from both universities. The course continues four years.

1103. *The Universities of Cambridge and Oxford*, in England, have scarcely any resemblance to our colleges and universities. They have been described by an intelligent traveller as "collections of funds and buildings, libraries and learned men, designed in various ways to aid in the promotion of science." Each university consists of a number of colleges, endowed with funds for the support of fellows and scholars, and the distribution of prizes. They are conducted on different principles, according to the direction of the donors. There is a formal course of public instruction, by lectures on science, and examinations in classical and mathematical learning; but these are little attended to by the students and produce little effect. Degrees are given, of course, after four years, residence; and to noblemen after two years, without examination.

Almost all the knowledge acquired in these institutions, is by voluntary study under the direction of the tutors, in private lessons. The students are stimulated in their pursuits by the establishment of honorary distinctions and prizes, and annuities for the support of scholars and fellows, which are distributed to those who hold the highest rank at an examination. The fellows receive a support at the university for life, with the expectation that they will devote their time to scientific and literary pursuits. The libraries of these universities are very large and valuable. The number of learned men is very great. The course of medical instruction is defective. London has long had medical schools which rival that of Edinburgh. *King's College* and the *London University*, have recently been established there.

Oxford is the most ancient of the universities. It now contains 20 colleges, and 8 halls, many of them remarkable for beauty or grandeur; and maintains about 1100 officers, fellows, and students, besides accommodating a large number who support themselves.

Cambridge contains 13 colleges and 4 halls, not less magnificent than those of Oxford; and supports 1300 officers, fellows, and students.

1104. *In the universities and Colleges of the United States*, a collection of buildings is usually erected, in which the students reside, and live at a common table. They are in other respects organized on the plan of the colleges of Scotland; but several of them pursue a more extended course of study. Instruction is generally continued through the year, with short vacations.

The students are superintended and taught by a number of professors, who deliver lectures on particular branches; and tutors, who direct their studies more particularly, and examine them in their daily lessons. It is also considered their duty to inspect and regulate the conduct of the students, and exercise a paternal care in forming their character. The course of study is usually four years; and degrees are conferred on examination, after a full course of instruction.

1105. New-England is more amply supplied with colleges than other parts of the Union, and receives a great number of students from other states.

1106. *Maine* has a flourishing literary institution and medical school, styled *Bowdoin College*, at Brunswick, and another at *Waterville*.

1107. In *New-Hampshire* is *Dartmouth College*, at Hanover. It was originally founded for the education of Indian youth; but is now similar to other colleges in its organization. It has a medical school connected with it.

1108. *Vermont* has an institution styled the *University of Vermont*, at Burlington, which is patronized by the state; and a college at *Middlebury*, supported entirely by private bounty. At Castleton a medical school has recently been established, connected with Middlebury College.

1109. In *Massachusetts* is *Harvard University* at Cambridge, the oldest in the United States. It holds the first rank in the extent of its funds, library, and means of instruction, and the number of its professors. A theological school at Cambridge, and a medical school in Boston are connected with it. This state also has a college, called *Williams' College*, at Williamstown; and another at *Amherst*, in Berkshire County, is a medical institution connected with Williams' College.

1110. In *Connecticut* is *Yale College* at New-Haven, which was next to Harvard in the period of its foundation, and is one of the first in the United States. It has very limited funds, but an extensive apparatus for chemical and philosophical instruction; and the finest cabinet of minerals in the United States. A medical college, a theological, and a law school, are connected with it. At Hartford is *Washington College*, an institution recently established, and at *Middletown* the *Wesleyan University*. *Litchfield* has a law school of celebrity.

1111. *Rhode Island* has an institution at Providence, called *Brown University*, in which a course of medical instruction is given.

1112. The *Middle States* have a number of flourishing literary institutions.

1113. *New York* has 4 colleges. *Columbia College*, in the City of New York, was the sixth established in the United States. There is also a celebrated medical institution in this city; and a law school, connected with Columbia College. *Union College* at Schenectady is a valuable institution, which has a fine collection of buildings, situated on a rising ground at a little distance from the town. *Hamilton College*, at Clinton near Utica, is of recent origin, but has advanced rapidly to a flourishing state. *Geneva College* is a recent Episcopal institution.

1114. In *Pennsylvania*, the University of Pennsylvania at Philadelphia, is chiefly distinguished for its course of medical instruction. *Dickinson College*, at Carlisle, was one of the early institutions of the country. *Allegany College* at Meadville; the *Western University* at Pittsburgh; *Jefferson College*, at Canonsburgh, 18 miles from Pittsburgh; *Washington College*, not far from it, *Madison College* at Uniontown, and *Bristol College* at Bristol, are more recent establishments, but have a respectable number of students.

1115. *New Jersey* has a flourishing college at Princeton styled *Nassau Hall*, and another at *New-Brunswick*. The former was among the earliest institutions of our country, and has produced some of our most celebrated men.

1116. *The Southern States* are not so well provided with literary institutions, and a large number of their youth are educated in the Northern States.

1117. *Maryland* has distinguished schools of medicine and law, and a Catholic College at Baltimore, and a college at *Annapolis*. In the *District of Columbia* is a Catholic College at Georgetown; and a Baptist institution, called the *Columbian College*, has recently been founded in the city of Washington.

1118. *Virginia* has established a university for the state at Charlottesville, with ample funds, to which $15,000 are annually appropriated. Extensive and elegant buildings have been erected, comprising 104 dormitories for students, with 5 hotels, or boarding houses, and several houses for the professors. At Williamsburg is the college of *William and Mary*, founded in the reign of those sovereigns; which at one period had nearly fallen to decay, but is now revived. At Lexington, in Rockbridge County, is *Washington College*, partially endowed by Gen. Washington. *Hampden Sidney College* is a flourishing college in Prince Edward County.

1119. *North Carolina* has a *State University at Chapel Hill*, liberally patronized, and rapidly advancing in usefulness and respectability.

1120. *South Carolina* has a *University* at *Columbia*, which is richly endowed from the public funds; and a college and medical school at *Charleston*. At Beaufort a college has been chartered.

1121. The *University of Georgia* consists of a well endowed college, called Franklin College, at Athens, and a number of academies or preparatory schools, one of which is to be established in each county, under the direction of a body, styled the Senatus Academicus.

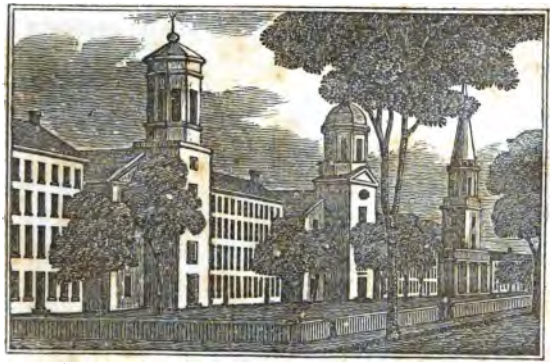
1122. *In the Western States*, a number of colleges have been founded on the appropriation of land made by Congress; but several have not gone into operation; and others have not risen above the rank of respectable academies.

1123. In *Mississippi*, is *Jefferson College*, at Washington near Natches, in which the course of study is similar to that of the Military Academy at West Point. (See 1129.)

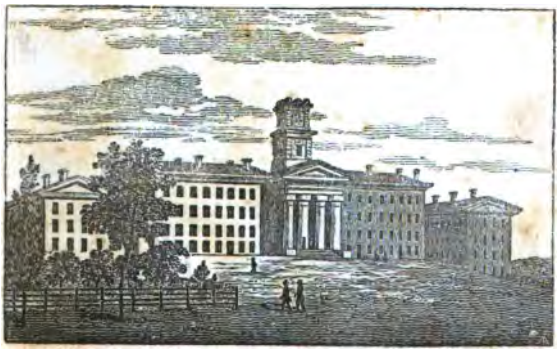
1124. *Tennessee* has colleges at *Greenville* and *Knoxville* in East Tennessee, and *Nashville* in West Tennessee. Another college is chartered in East Tennessee at Washington.

1125. *Kentucky* has colleges at *Danville*, *Augusta*, *Princeton* and *George*

HARVARD COLLEGE, CAMBRIDGE.



YALE COLLEGE, NEW-HAVEN.

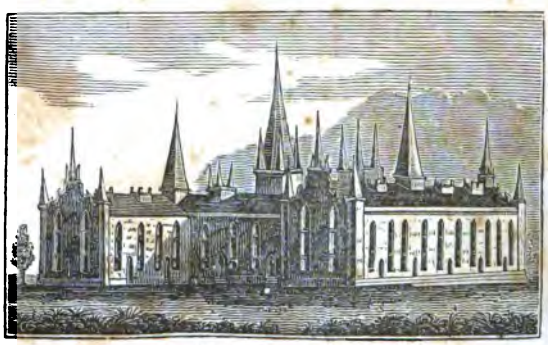


AMHERST COLLEGE, MASS.

P. 210.

WEST POINT, HUDSON RIVER.

VIRGINIA UNIVERSITY.



KENYON COLLEGE, OHIO.

town; and at *Bardstown*, a Catholic institution. At Lexington is a flourishing university, styled the *Transylvania University*, which comprises a law school and a medical institution. It holds the first rank among the Western institutions.

1126. In *Ohio*, is the *Cincinnati University*, at Cincinnati, which has a medical school, and a respectable literary institution. At *Athens* and *Oxford* also, colleges are in operation; and at Hudson, the *Western Reserve College*. *Kenyon College* at Gambier, is an Episcopal institution, richly endowed.

Colleges have also been founded at *Bloomington* in Indiana, *Jacksonville* in Illinois, *Tuscaloosa* in Alabama, and *Jackson* and *New-Orleans*, in Louisiana.

1127. Besides these colleges there are numerous *classical and scientific schools of a higher order in the United States*, usually termed *academies*. But the course of instruction is by no means so extensive and minute as in European gymnasia. A few are established upon funds bestowed by private donors, and in some states they are supported by law; but they are generally dependent on the immediate contributions of individuals, and the fees of tuition.

1128. *Institutions for the education of the deaf and dumb*, have been in successful operation for several years, at Hartford, (Conn.) New-York, Canajoharie, (N. Y.), and Philadelphia; and two have been commenced in the Western States.

1129. Among the most distinguished scientific institutions in the United States, is the *Military Academy* at West Point, on the Hudson River. It is said to rival or surpass the best establishments of the kind in Europe. A very thorough course of instruction is given in the natural sciences, and especially the mathematics, including the highest branches, in their application to the military art, the French language, drawing, and the elements of moral and political philosophy.

There are two hundred and fifty students, supported by the United States, each for five years. They reside in a large building, live at a common table, and are continually subject to military discipline. They are daily exercised by companies, in military manœuvres; and are encamped at least three months in the year Each in his turn, has an opportunity of learning the duties of a common soldier, and of every grade of office. Those who finish the course of five years, are considered candidates for vacancies which may occur among the officers of the army.

1130. We find *institutions* termed universities and colleges *among* the *Mahometan and other Half-Civilized nations;* but we know little of their plan of instruction. In these countries, science of course is not taught, because it is not known; and scarcely any thing is acquired beyond a knowledge of their religion and laws. Among the Persians, who are among the most learned people in the East, philosophy and metaphysics are also taught, and poetry is cultivated.

1131. *Arabia* has two celebrated Academies of a higher order, in the province of Yemen, one at Zebid and the other at Damar, and colleges in other cities. In *Turkey and Persia*, a madresse, or college, is usually connected with every mosque, superintended by the priests. The principal colleges in Turkey, are connected with the mosques of Constantinople and Adrianople.

1132. *The Mahometan Tartars* of Russia have academies at Kazan, Tobolsk, and Astrachan. *Bucharia* has several colleges prepared for students, one of which, designed for Mahometan priests, has 300 apartments. *Samarcand* was a seat of science in ancient times, and is now resorted to from all quarters, for the acquisition of Mahometan learning. Peshawer, in Cabul, also has a public seminary.

1133. *Tibet, China, and Farther India*, have their places of education of a higher order; but little is known of them.

1134. In *Hindoostan*, the Brahmins form the literary class of the community. They have a number of schools for instruction in their mythology and literature, of which Benares is the most celebrated.

1135. *Literary institutions have been established in Hindoostan by the British government.* At *Fort William*, in Calcutta, there is a college for the education of young men designed for the service of the East India Company. It is chiefly devoted to the languages, laws, and institutions of the Hindoos.

In *Poonah*, another college has been instituted under the sanction of the government, for the preservation of Hindoo literature, and the education of young men of the Brahmin cast, in the learning of India. Ten native professors are appointed. All young men of respectability are allowed to attend gratis, and the government partially maintain 100 students, in each branch of study.

1136. Several institutions have also been founded in India, by the benevolence of Christian individuals and societies. At *Benares* is an institution like that of Poonah, founded by the benevolence of an English gentleman. It contains nearly 1000 students, from 12 to 18 years of age, most of whom receive a partial support from the funds. The course of study embraces twelve years.

At *Cotym*, in the country of the Syrian Christians on the Malabar coast, a college has been established by the English Church Missionary Society, for the education of the Syrian priests, with a system of preparatory schools. At *Batticotta* in Ceylon, is an American Mission College.

1137. In Egypt, the present Bashaw has established a Military School, in which it is stated that 700 pupils are now receiving elementary instruction; 30 are studying the Italian language, and 30 are attending to a course of medicine under the direction of foreign teachers. The Bashaw has also sent a number of young Egyptians to receive an education in France and England.

1138. The United States and Great Britain have a number of *institutions exclusively devoted to the education of clergymen.*

The principal establishments of this kind in Great Britain, are at Homerton, Stepney, and Bristol, in England, for Congregationalists or Independents; at Glasgow and Aberdeen in Scotland, for Presbyterians; and at Maynooth, in Ireland, for Catholics. In *Catholic countries*, every monastery contains a classical and theological school; and several of this kind exist in the United States.

1139. The following tables present an account of the Theological Institutions, Universities, and Colleges, in the United States.

THEOLOGICAL SEMINARIES.		Denomination.	Professors.	Students.	Libraries.
Bangor Theological Seminary,	Bangor, Maine,	Cong.	2	6	2,000
Theological Seminary,	Andover, Mass.	Cong.	5	139	11,000
Theological School,	Cambridge, "	Cong. Unit.	3	36	
Theological Institution,	Newton, "	Baptist,	3	53	1,800
Theological Institute,	East Windsor, Ct.	Cong.	4		
Theological Dep. Yale College,	New Haven, "	Cong.	3	55	
Theol. Ins. Episcopal Church,	New York, N. Y.	Episcopal,	6	65	3,800
Theol. Seminary of Auburn,	Auburn, "	Presbyterian,	3	64	4,500
Hamilton Lit. and The. Institute,	Hamilton, "	Baptist,	4	38	2,250
Hartwick Seminary,	Hartwick, "	Lutheran,	2	9	1,000
Theol. Sem. Du. Ref. Church,	New Brunswick, N. J.	Dutch Ref.	3	24	
Theol. Sem. Pr. Church U. S.	Princeton, "	Presbyterian,	3	119	6,500
Seminary Luth. Church U. S.	Gettysburg, Pa.	Evang. Lu.	2	20	7,000
German Reformed,	York, "	Ger. Ref. Ch.	2	20	
West. Theological Seminary,	Alleghany T. "	Presbyterian,	2	29	4,000
Theological School,	Near Alexandria, D. C.	Episcopal,		30	2,000
Episcopal Theological Schl. Va.	Fairfax County, Va.	Episcopal,	2	39	2,000
Union Theological Seminary,	Pr. Ed. County, "	Presbyterian,	2	50	4,000
Southern Theological Seminary,	Columbia, S. C.	Presbyterian,	3	21	1,800
Theological Seminary,	Lexington, "	Lutheran,	2	1	
Furman Theological Seminary,	High Hills, "	Baptist,	2		1,000
South West Theol. Seminary,	Maryville, Tenn.	Presbyterian,	1	22	6,000
Lane Seminary,	Cincinnati, Ohio.	Presbyterian,	3	42	
		Total,	62	872	60,730

MEDICAL SCHOOLS.		Professors.	Students.
Main Medical School,	Brunswick,	5	80
New Hampshire Medical School,	Hanover,	3	100
Vermont Medical School, University Vermont,	Burlington,	3	14
Vermont Academy of Medicine,	Castleton, Vermont,	6	62
Massachusetts Medical School, Harvard University,	Boston,	6	82
Berkshire Medical Institution, Williams' College,	Pittsfield, Mass.	5	65
Medical School, Yale College,	New Haven, Conn.	5	73
College Physicians and Surgeons, N. Y.	New York,	7	158
College Physicians and Surgeons, Western District,	Fairfield,	5	198
Medical Department, Jefferson College,	Philadelphia, Penn.	6	121
Medical Department, University Pennsylvania,	" "	9	481
Medical Department, University Maryland,	Baltimore,	6	150
Washington Medical College,	"	6	
Medical Department, Columbian College,	Washington, D. C.	6	30
Medical Department, University, Virginia,	Charlottesville,	3	46
Medical College, State of S. C.	Charleston,	7	150
Medical College, of S. C.	"		
South School Practical Medicine,	" S. C.	6	
Medical College of Georgia,	Augusta,	6	
Medical College, Transylvania University,	Lexington, Ky.	6	211
Louisville Medical College,	Louisville, "	6	
Medical College of Ohio,	Cincinnati,	6	110
	Total,	118	2,887

There are *Law Schools* at Cambridge, Mass., New Haven, Ct., Philadelphia, Pa., Baltimore, Md., Williamsburg, Staunton, and Charlottesville, Va., Lexington, Ky., and Cincinnati, Ohio.

COLLEGES IN THE UNITED STATES.

The number of students belonging to the Colleges, consists of UNDERGRADUATES only; and it excludes also, medical, theological, and law students. The number of instructors mentioned, does not include the presidents. In the column of denominations to which the Colleges belong, those which are not marked, are generally supposed to be either Congregational or Presbyterian. The greater part of the students in the Catholic Colleges, belong to the preparatory department.

Name.	Place.	Denomination.	Instructors.	Students.	Vols. in College Libr's.	Vols. in Students' Libraries.
Bowdoin,	Brunswick, Maine.		10	169	8,000	6,000
Waterville,	Waterville, "	Baptist.	8	109	2,000	600
Dartmouth,	Hanover, N. H.		10	156	4,500	8,500
University of Vermont,	Burlington, Vermont.		7	50	1,000	1,000
Middlebury,	Middlebury, "		5	129	2,330	3,100
Harvard University,	Cambridge, Mass.		30	217	40,000	4,500
Williams,	Williamstown, "		7	133	3,000	2,300
Amherst,	Amherst, "		9	227	4,300	6,250
Brown University,	Providence, Rhode Island.	Baptist.	8	157	6,000	5,600
Yale,	New Haven, Connecticut.		26	376	8,500	10,500
Washington,	Hartford, "	Epis.	8	53	2,000	2,500
Wesleyan University,	Middletown, "	Methodist.	5	60	3,000	
Columbia,	New York, N. Y.	Epis.	11	100	8,000	6,000
Union,	Schenectady, "		9	225	5,250	8,220
Hamilton,	Clinton, "		6	97	2,500	3,700
Geneva,	Geneva, "	Epis.	8	44	820	1,150
University of New York,	New York, "		16	226		
College of New Jersey,	Princeton, N. J.		12	170	7,000	4,000
Rutgers,	Brunswick, "		8	85	3,750	2,500
University of Pennsylvania,	Philadelphia, Penn.		20	94	2,000	
Dickinson,	Carlisle, "	Methodist.			2,000	
La Fayette,	Easton, "		3	54		
Jefferson,	Canonsburg, "		9	175	1,000	2,400
Bristol,	Bristol, "	Epis.	1	85		
Washington,	Washington, "		7	47	1,500	
Allegheny,	Meadville, "	Methodist.	3		3,000	
Western University,	Pittsburg, "		4	50	500	
Pennsylvania,	Gettysburg, "		8			
Newark,	Newark, Delaware.		3			
University of Maryland,	Baltimore, Md.		7			
St. John's,	Annapolis, "	Epis.	5	32	2,700	400
St. Mary's,	Baltimore "	Catholic.	24	193	10,500	
Mount St. Mary's	Emmetsburg, "	Catholic.	25	90	7,000	
Columbian,	Washington, D. C.	Baptist.	9	25	4,000	
Georgetown,	Georgetown, "	Catholic.	17	134	12,000	
William and Mary,	Williamsburg, Va.		6	15	3,500	600
Hampden Sydney,	Prince Ed. Co., "		6	75	5,000	3,200
Washington,	Lexington, "		4	46	1,500	
University of Virginia,	Charlottsville, "		10	205	8,000	
Randolph Macon,	Boydton, "	Methodist.	4			
Univ. of North Carolina,	Chapel Hill, N. C.		7	99	1,800	3,000
Charleston,	Charleston, S. C.	Epis.	7	39	3,000	
College of South Carolina,	Columbia, "		7	50	10,000	
University of Georgia,	Athens, Georgia.		9	97	3,200	3,000
Alabama University,	Tuscaloosa, Ala.		6	191	3,000	
Jefferson,	Washington, Miss.					
Louisiana,	Jackson, Louisiana.		4	15	350	
Greenville,	Greenville, Tenn.		1	38	3,500	
University of Nashville,	Nashville, "		6	70	2,000	1,200
East Tennessee,	Knoxville, "		2	28	1,400	200
Transylvania,	Lexington, Ky.		11		2,400	1,500
Centre,	Danville, "		8	66	1,000	
Augusta,	Augusta, "	Methodist.	6	75	2,000	500
Cumberland,	Princeton, "		3	72	800	
St. Joseph's,	Bardstown, "	Catholic.	14	130	5,000	
Georgetown,	Georgetown, "	Baptist.	4	36	1,200	
University of Ohio,	Athens, Ohio.		5	45	1,000	1,000
Miami University,	Oxford, "		8	126	1,200	2,500
Western Reserve,	Hudson, "		5	46	1,600	300
Kenyon,	Gambier, "	Epis.	10	71	2,300	
Franklin,	New Athens, "		4	40	1,200	
Indiana,	Bloomington, Ind.		4	34	400	200
South Hanover,	South Hanover, "		6	85		
Illinois,	Jacksonville, Ill.		5	8	1,200	
St. Louis University,	St. Louis, "	Catholic.	11	154	4,800	
St. Mary's,	Barrens, Missouri.	Catholic.	15	124	6,000	
		Total,	547	5,702	241,800	97,120

Comparative Table of the number of Students in the United States with that of the Countries of Europe as estimated in 1831.

From the American Annals of Education and Instruction, conducted by W. C. Woodbridge, Vol. II. Page 333.

The number of *Academical* Students in the United States is here estimated at 3,475; Theological Students, 663; Legal, 888; Medical, not far from 2,000. They belong to the several States as here apportioned. The Medical and Legal Students are divided among the various States according to their respective population.

American States.	No. of Stud'ts.	Proportion to Inhabitants.		*European Countries.*	No. of Stud'ts.	Proportion to Inhabi'ts.	
				Scotland	3,249	1	683
Massachusetts	770	1	792	Baden	1,399	1	816
Connecticut	327	1	960	Saxony	1,360	1	1,040
				England	10,549	1	1,132
New Hampshire	241	1	1,118	Hanover	1,203	1	1,363
				Bavaria	2,593	1	1,312
				Tuscany	909	1	1,402
				Spain	9,867	1	1,414
				Prussia	6,236	1	1,476
Vermont	186	1	1,509				
Maine	238	1	1,611				
New Jersey	193	1	1,661				
				Wurtemberg	887	1	1,731
South Carolina	325	1	1,789	Norway and Sweden	2,687	1	1,732
				Portugal	1,604	1	1,879
Pennsylvania	688	1	1,928				
New York	986	1	1,940				
Rhode Island	50	1	1,944				
				Netherlands	2,998	1	1,979
				Sardinia	1,722	1	2,429
Maryland	175	1	2,554				
Virginia	457	1	2,650	Switzerland	767	1	2,655
Kentucky	249	1	2,766				
Georgia	173	1	2,985				
Mississippi	45	1	3,040				
North Carolina	233	1	3,170				
Tennessee	211	1	3,245				
Ohio	285	1	3,290				
Louisiana	46	1	3,335				
Delaware	23	1	3,336				
				Denmark	578	1	3,342
Alabama	84	1	3,634	Sicily and Naples	2,065	1	3,590
				Austria	8,584	1	3,786
Missouri	28	1	5,003				
Indiana	65	1	5,101	France	6,196	1	5,140
Illinois	28	1	5,624				
				Ireland	1,254	1	5,767
				Russia	3,626	1	15,455
Sections of the United States.				*European Countries.*			
Eastern States	1,748	1	1,118	England	10,549	1	1,132
Middle States	1,995	1	1,844	Portugal	1,604	1	1,879
Southern States	1,485	1	2,612	Switzerland	767	1	2,655
Western States	957	1	3,516	Naples and Sicily	2,065	1	3,590
Whole United St.	6,185	1	2,078	Western Europe	69,634	1	2,285

In reviewing this table, we shall perceive, that in accordance with an opinion often expressed, Scotland gives more of her youth a collegiate education than any other country in the world. Baden, Massachusetts, and Connecticut, fall little short of this standard; and these are the only countries in the world, according to these estimates, which have one collegiate pupil for less than 1,000 inhabitants. New Hampshire, according to the calculation of the American Quarterly Register, is the only American State besides, in which there is more than one for 1,500; while in Europe, Saxony, England, Hanover, Bavaria, Tuscany, Spain, and Russia, all have a proportion greater than this. It must not be forgotten, however, that the Universities and Colleges of Spain furnish nothing which deserves to be called, a truly liberal education. Vermont, Maine, New Jersey, South Carolina, Pennsylvania, New York, and Rhode Island, composing all the Eastern and three of the Middle States, and one of the Southern, have one student for less than 2,000 inhabitants, in which they are rivalled by Wurtemberg, Sweden, Portugal, and the Netherlands. Most of the Southern and Western States have from 2,000 to 4,000 inhabitants to a student. In this proportion, the highest compare with Switzerland, and the rest with Denmark, Naples and Austria. The most recent Western States have only one to every 5,000 inhabitants; and still are placed on a level with France and Ireland. Russia, stands alone among the civilized countries of the world, and only gives a liberal education to one person in 15,000 of her population.

As a mass, it would appear that the Eastern States provide the advantages of a collegiate education, such as they are in the United States, for a greater proportion of their population than England, or any European countries except Scotland, Baden, and Saxony. The Middle States are as well provided as Wurtemberg, Sweden, and the Netherlands. The Southern States will compare with Switzerland in this respect; and the Western States, with all their destitution, are as well supplied with liberally educated men, so far as *numbers* are concerned, as Denmark and Austria.

The comparative state of Common School Instruction is very different from that of Collegiate Instruction. In this, the United States have the pre-eminence, whether we compare them with the mass of European countries, or select individual examples. The Edinburgh Review admitted many years since, that 'The great body of the American people is better educated (instructed) than the mass of *any European community*.'

The following table derived from the best sources, shows the proportion of children who receive Common School Instruction to the whole population, in several European countries, and in several of the United States, and furnishes statistical evidence of the truth of this remark.

Proportion of Pupils in Common Schools to the whole Population.

	Pupil.		Inhab.		Pupil.		Inhab.
Wurtemberg	1	to	6	New York	1	to	3.9
Canton Vaud, Switzerland	1	to	6.6				
Bavaria	1	to	7	Massachusetts, Maine, Connecticut, estimated.	1	to	4
Prussia	1	to	7				
Netherlands	1	to	9.7				
Scotland	1	to	10				
Austria	1	to	13	All New England, at least	1	to	5
England	1	to	15.3				
France	1	to	17.6				
Ireland	1	to	18	Pennsylvania, N. Jersey	1	to	8
Portugal	1	to	88	Illinois	1	to	13
Russia	1	to	367	Kentucky	1	to	21

It will be seen in examining this table, that the proportion of children receiving Common School Instruction in New York and the Eastern States, is greater than in any country of the civilized world.

LIBRARIES.

1140. Books are rendered more useful among civilized nations, by their collection and preservation in public libraries. The following is a list of the principal libraries in the world.

TABLE OF LIBRARIES.

	Volumes.		Volumes.
Paris, (Royal)	800,000	Edinburgh University	50,000
—(*manuscripts*)	70,000	Leyden do.	50,000
Rome, (Vatican)	500,000	Geneva do.	50,000
Oxford (University)	500,000	Gotha do.	50,000
Munich, (Royal)	400,000	Dublin do.	50,000
Petersburgh, (Imperial)	300,000	Coimbra do.	40,000
Vienna, (Imperial)	300,000	Upsal do.	40,000
Gottingen, (University)	300,000	Mafra Coll. (Portugal)	40,000
Copenhagen, (Royal)	270,000	St. Andrew's University	36,000
Dresden, (Royal)	250,000	Dantzic	30,000
Berlin, (Royal)	200,000	*Cambridge University*	35,000
Wolfenbuttel	200,000	*Washington*, (*Congress*)	25,000
Cambridge University, (Eng.)	200,000	*Philadelphia*	22,000
Stutgard	170,000	*Boston Atheneum*	21,000
Bologna	150,000	Berne	20,000
Paris, (Arsenal)	150,000	Escurial	20,000
Milan, (Ambrosian)	60,000	Lund	20,000
—(*manuscripts*)	15,000	Salamanca	20,000
Prague	160,000	*Buenos Ayres* (*State Library*)	20,000
Madrid, (Royal)	100,000	*New York*	14,650
Brussels	100,000	*Yale College*	18,000
Paris, (St. Genevieve)	110,000	Aberdeen University	13,000
Vienna University	108,000	*Baltimore*	10,000
Lyons	106,000	Abo University	10,000
Bordeaux	105,000	*Princeton College*	8,000
Gratz	105,000	*Bowdoin College*	8,000
Paris, (Pantheon)	102,000	*Allegany College*	8,000
Hamburgh	100,000	*Brown University*	6,000
Frankfort on the Maine	100,000	*Gettysburg Sem.*	6,000
Weimar	100,000	*Georgetown College*	6,000
Florence	90,000	*Salem Atheneum*	5,000
Edinburgh, (Advocates)	70,000	*Andover Theol. Semin.*	6,000
Turin	69,000	*Union College*, (*New York*)	5,000
Copenhagen University	60,000	*Washington College*, (*Conn.*)	5,000
Petersburgh, (Hermitage)	60,000		

1141. *The libraries of Europe* are the most valuable in the world. Those of Paris, and many others on the continent, are open to all persons, at certain hours of the day. Those of the German and American Universities, are accessible to all the students. Those of the English Universities are divided into small portions, in the different colleges; and are subject to various restrictions, which greatly diminish their usefulness.

1142. There is no considerable library *in the United States*, which is open to all, like those of Paris. The largest library is that of the University at Cambridge. Those of Philadelphia, and of the Boston Atheneum, are nearly as large. Those of New-York, Baltimore, and Charleston, are next in rank. All our public libraries united, do not contain as many volumes as one of the largest in Europe. There are, however, numerous town and village libraries, in all parts of the country, which serve a more valuable purpose in the general diffusion of knowledge.

NATIONAL CHARACTER.

1143 The *character of nations is marked* in some measure, with the peculiarities of the race to which they belong. *It is also affected*, directly or indirectly, by the influence of physical causes, climate, soil, &c ; but it is chiefly determined by the influence of moral causes—government, religion, and the state of society.

CHARACTERISTICS OF THE RACES.

1144. The *European race* embraces all the civilized and enlightened nations now existing in the world; and it is therefore common to consider this race as the most intelligent. It is remarkable that there is no example known, even in history, of a tribe of this race, which was not so far civilized as to till the ground, or rear cattle.

1145. The Russians, Cossacs, Turks, Tartars, and the nations around the Caspian Sea, who form *the Caucasian family* of the European race, are said to be distinguished for a restless, impetuous, warlike disposition, and have little aptitude for science or refinement.

1146. The Highland-Scotch, Irish, French, Portuguese, Spanish, Italians, and Greeks, who form the *Celtic family*, usually have strong passions and lively dispositions; and all except the Spanish, Portuguese, and Italians, are conspicuous for activity, ingenuity, vivacity, and enterprise.

1147. The *Gothic, or German family*, including the Germans, Danes, Hollanders, Swedes, Norwegians, and Icelanders, are also ingenious, but usually phlegmatic, and most distinguished for patient, persevering industry. The Swedes are the most lively.

1148. Of the *Asiatic or Mongolian race*, the *Burmans*, *Mongols*, and some other *Tartar tribes* are active, bold, and fond of war.

The *Chinese*, *Japanese*, and other nations east of the Ganges, are generally mild and timid, and make few improvements in knowledge and arts.

The *dwarfish tribes* of the Asiatic race, that inhabit the northern regions of Europe, Asia, and America, are dull, filthy, and indolent in their natural state; but mild, gentle, and docile. They include the Esquimaux and Samoiedes.

1149. The *American and Malay races* are generally bold, active, and crafty; and patient under fatigue and suffering. The *Malays* are distinguished for levity, treachery, and cruelty.

The *North American Indians* are generally grave, hospitable,

and generous in their dispositions; and a high degree of native intelligence and eloquence is found among their warriors and chiefs.

Many of *the independent tribes of South America* have the same character. Others are marked by a great degree of natural ferocity and treachery. The *Peruvian Indians* are mild, patient, and remarkable for fidelity and honesty. The Indians subject to the European colonies, are degraded by oppression or slavery. The *Mestizoes* are distinguished for vivacity, and generally surpass the Spaniards in intelligence. The *Cholos* are remarkably active and sprightly; and exhibit great skill in imitation, and the mechanic arts.

1150. Improvidence, thoughtlessness, and gayety are prominent characteristics of the *African race*, and they are passionately fond of music and dancing. "From the hour of sunset," says a traveller, "all Africa dances." They are generally considered less intelligent and ingenious than the other races. But in civilized countries, they have usually existed only in slavery—a state in which there is no opportunity for exhibiting or improving their intellectual powers. The Africans of Hayti give as much evidence of intelligence, as any nation so lately favored with the means of instruction.

The *Hottentots* and the *Papuan race* of Australia, are mild, but stupid, indolent, filthy, and sensual, and remarkably destitute of ingenuity and reflection. The Hottentots, however, have been found capable of improvement by education. The Papuans are in the most degraded state of any human beings yet discovered.

The *Caffres* are more bold, intelligent, active, and ingenious, than most other nations of the African race; and appear to possess noble traits of character.

INFLUENCE OF PHYSICAL CAUSES.

1151. The character of the same race is sometimes modified by the influence of climate, soil, and situation.

The inhabitants of hot countries are generally indolent; and rarely exhibit the same activity and enterprise, or the same skill in the sciences, as those of more temperate climates. This is true in the hot countries of Asia and Africa. The natives of warm climates are usually characterized by the ardor and impetuosity of their *feelings*, and the liveliness of their *imaginations*. This is remarkable in the Persians, Arabs, and other inhabitants of Southern Asia; and may be seen to some extent in the Southern United States.

1152. In advancing north, we usually find the ardor of feeling

decline, and *the people of colder climates* are more distinguished for active and persevering industry, and strong powers of reason and judgment. Such is the fact with the middle and northern nations of Europe, compared with the southern.

The inhabitants of the middle and northern portions of the Temperate Zones, and of other regions corresponding to them in climate, have usually been the most intelligent, enterprising, and industrious of the race to which they belong.

The inhabitants of the *countries near the Polar circles*, exhibit a stupid indolence and indifference of character, cherished by the gloom of their climate, which obliges them to spend a large portion of the year in confinement in their huts. This is striking in the Greenlanders, Esquimaux, Laplanders, and Samoiedes. The climate which will not permit the growth of the oak, does not bring the human powers to perfection.

1153. The character of nations is more influenced by *the nature and situation of their country*.

The inhabitants of fertile regions gain their subsistence so easily, that indolence is a prevailing characteristic. For this reason, they are seldom hardy or enterprising, and their slothful habits often lead to the practice of vice in an unusual degree. This is seen in the Hindoos, Turks, and most of the African nations; and in some degree, in the Portuguese and Italians

1154. On the contrary, *the inhabitants of rough, barren countries*, or those in which it is difficult to obtain a subsistence, are usually distinguished as hardy and enterprising. The habits of industry, which become necessary in order to gain a support, prevent them from the practice of many vices, and often render their situation more comfortable than that of the people of more fertile countries. The Swedes, Norwegians, Icelanders, Scotch, many of the Swiss, and New-Englanders, are striking examples to illustrate this principle. The unusual industry and comfort found among the Swiss, in the midst of their barren mountains, are singularly contrasted with the indolence, filthiness, and poverty observed on the rich plains of the south of Italy.

The situation of *Holland*, requiring the constant efforts of the people to preserve it from the irruptions of the sea, and to obtain support, has produced a similar effect in that country. The *mountain tribes* of Persia and Turkey, and the Arabs of the desert, are far more hardy and industrious, and less corrupt, also, than the inhabitants of the fertile regions around them; and keep the latter in perpetual fear, from their superior military prowess.

1155. *In an island*, or a country situated *on the sea coast*, a spirit of enterprise and adventure usually exists in a higher de-

gree than in inland countries, where there is nothing to lead the people from their homes. Great Britain, Holland, Norway, and the sea-coast of the northern United States, furnish striking examples of this, when contrasted with Austria, and the interior of Germany and Pennsylvania.

INFLUENCE OF MORAL CAUSES.

1156. *The diffusion of knowledge*, and especially moral and religious knowledge, by means of schools, books, and public teachers, is the only foundation of national virtue; and the effects may be seen in Scotland, Sweden, Switzerland, and New-England.

On the other hand, *general ignorance* is almost invariably attended with general corruption, as is fully exhibited in Russia, and the Catholic countries of Europe. A marked distinction may be observed, even among the towns of our own country, proportioned to the means of instruction they enjoy.

Hence *the means of intellectual and moral instruction* and social intercourse, have a large share in forming the character of a nation. The causes which influence the former, also affect the latter; and the state of knowledge, as already described, will enable us to form some estimate of the character of a people.

POPULATION.

1157. In nations which are similar in other respects, the state of *population* has great influence on national character.

A population which is dense, without being crowded, so as to render intercourse easy, and to allow the establishment of public worship, and of the means of instruction within the reach of the inhabitants, is most favorable to virtuous habits. In such countries, as in Switzerland, Sweden, and the northern United States, there are few large cities crowded with people, and the inhabitants are generally settled in villages, or scattered upon farms.

1158. *In a country very thinly settled*, the people cannot have that frequent intercourse or connection, which is so important to improvement in arts and manners. To this cause is to be ascribed in some measure, the savage character of many nations, inhabiting countries which will not support a dense population; as in Siberia, the northern regions of North America, and the deserts of Africa. Even in cultivated countries which are thinly settled, the progress of improvement is checked by these circumstances. This observation is exemplified in the western portions of the United States, and in all newly settled countries; and from the influence of these causes, colonies are usually far behind the mother country, in knowledge, arts, and moral improvement

1159. On the other hand, it is found that when there is a *crowded population*, as in large cities, vice, poverty and misery are greatly increased. In these cases, the few who become wealthy, are rendered indolent by their wealth; many of those who depend on them for support, cannot obtain employment without difficulty, and are led into vicious habits, or resort to beggary or dishonesty for subsistence. The operation of these causes may be seen in the general contrast of the city with the country. Striking illustrations are furnished by the great cities of Europe, which present a mass of wretchedness and vice, entirely unknown in the United States. In Paris, one-third of the deaths occur in the public hospitals.

STATE OF SOCIETY.

1160. The character of nations is especially influenced by their *state of society, government, and religion.*

Savages are in the childhood of society; and a singular freedom from *ordinary vices* is found in some nations, especially those inhabiting islands, oftener from the want of temptation, than from any peculiarity of character. Thus they do not value *property* because it will not procure them any additional enjoyments which they regard; they are therefore often free from the vices, which arise from the desire of wealth among civilized nations, and are ready to practice hospitality and generosity. In some respects they exhibit great purity of morals; while in others of equal or greater importance, they abandon themselves to the worst of crimes.

In warfare and revenge, and in pursuit of honor, which is the chief object of desire, they practice the basest treachery and the most dreadful cruelties, even on the helpless and defenceless. *They unite* in small tribes or communities, and the members of the same tribe are strongly attached to each other, and to their allies; but they usually agree in the most deadly hatred towards other tribes. The North American Indians and savage tribes of Africa have this character.

Savages are so generally free from the restraints of law and government, that they *are characterized* by a bold, independent, and lawless spirit. Fortitude and patience under extreme sufferings, and great command of passions, are striking traits in the character of the American Indians; and they esteem it an honor to be tortured by their enemies, that they may have an opportunity of exhibiting these qualities.

As there are no regular courts of justice among savages, each man is left to protect his own rights, and a revengeful spirit is cherished, which is not restrained either by law or religion.

1161. *In gaining a subsistence*, savages are almost always careless and improvident, rarely laying up stores for the future, and consuming or destroying at a single meal, what might support them for some time. They are restless in their *disposition*, and will endure any toil and hardship in the chase or fisheries, or in war. But they are extremely averse to most kinds of regular *labor*, and esteem it a degrading employment, proper only for females. They are usually very *superstitious*, believing in charms, incantations, and the supernatural power of sorcerers.

1162. *Barbarous nations*, like the Tartars, Arabs, &c. have much of the ferocity, boldness, and independence of savages. *Robbery* usually prevails to a great extent, and is considered honorable. The aspect of the whole community is rough and turbulent, and there is little security for life or property. *Hospitality*, or at least its form, still prevails, and a stranger is usually provided for when he throws himself on their protection, though he may be robbed if he does not. But the Arabs, who are the most remarkable for this custom, will sometimes take measures to deceive a traveller, and prevent his coming to their tents.

Barbarous nations are also marked by strong attachments and warm social affections in the tribe, and hostility to other tribes. Those of Africa are chiefly under despotic governments, and the people are in a state of slavery, which tends to depress and corrupt them.

In the Savage and Barbarous nations of the world *the influence of the Pagan religion* is generally united to that of their state of society, and admits the same unrestrained indulgence of appetite and ferocity.

1163. In *Half-Civilized nations*, the independent, warlike, and revengeful disposition of savages is diminished, by the establishment of laws or systems of government; and the passions and appetites are in some degree restrained. The habits and manners of the people are more uniform and regular. The whole spirit is that of imitation, and the principles and practices of their forefathers are adopted, without any effort or desire for improvement.

In these, and in Civilized countries, the government and religion are reduced so much to a system, that the character of the people must be referred chiefly to their influence.

GOVERNMENT.

1164. *The influence of despotic governments* is most completely felt in China and other Half-Civilized countries of Asia, where it has prevailed for ages. The power of nobles and priests has been entirely checked by that of the sovereign.

The arts which contribute to magnificence and splendor, are

often patronized, but general improvement is rather checked than encouraged. Despotism prevails throughout every rank in society. The sovereign oppresses his officers, and they exercise the same authority over their inferiors. *The people* are orderly, and usually industrious; but tame, quiet, and feeble; without energy or enterprise; and unable to withstand the attacks of Barbarous nations. Thus the Tartars overran Hindoostan and China, and still reign in these empires.

1165. *The moral character* is not less injured by a despotism. As the subject is liable to have the fruits of his labors taken from him, he has no motive to provide for any but his present wants, to make improvements, or to accumulate wealth. Not being able to defend himself by strength, he resorts to concealment and deception, to preserve his property, and protect himself from oppression; and practices flattery to gain favor. Hence fraud and flattery are the usual characteristics of nations under despotic governments. The Chinese are said by the members of the late British embassy, to have a uniform character of falsehood, through all ranks, from the emperor to the beggar.

1166. The same state of things exist *in all absolute governments*, in proportion to the degree of despotism, and to the state of civilization of the people. In the absolute monarchies of Civilized countries, the influence of the government is somewhat limited by the restraints of the Christian religion, and of the principles and customs produced by its influence, together with the greater amount of knowledge diffused among the people. But in Russia, and in some parts of Austria, and in Italy, Spain, and Portugal, a character similar to that described, prevails among the lower classes.

1167. *In limited monarchies*, the restraints which are placed on the power of the king, prevent the oppression and tyranny to which the subjects of a despotic government are exposed, and the habits of concealment, flattery, and fraud, are not so general. The people have some share in the government, and a spirit of independence is cherished. They are protected in the enjoyment of their property and rights; and are therefore encouraged to be industrious and enterprising, and to endeavor to make improvements. They are usually allowed to think and speak with freedom, and the powers of the mind are much more enlarged.

1168. Various degrees of *liberty* are enjoyed in different countries, which have a limited or free government; and the progress of improvement, and the moral condition of the people are proportioned to the liberty enjoyed.

Sweden, Norway, England, and Scotland, which have usually been the most free among the monarchical states, and

publics of Switzerland and the United States, have been most *distinguished for general intelligence and virtue.* In *republican governments*, where the greatest freedom is enjoyed, the people are remarkable for their independent, enterprising spirit, and the rapid progress of improvement.

RELIGION.

1169. *Religion* presents one of the most powerful motives which actuate man; and therefore the peculiar features of the system adopted by a nation must affect their character materially.

The religious systems of Pagan nations are usually unfavorable, both to purity of morals and benevolence of disposition; and under their influence, we find the human character in its most debased condition.

"Throughout all India," it is observed by a writer of eminence, "there is not such a thing as common honesty; and it is scarcely possible to administer justice, on account of the universal practice of perjury. The most shameful crimes are committed without disgrace; and, as has been already stated, the very worship of their gods is often attended with impurity and blood. In many of these nations, a person in distress is left to suffer or perish by his friends. The destruction of parents and children, the sick and feeble, are common customs."

1170. *Mahometans* are taught to regard those of other religions with contempt and hatred, and to consider the knowledge of other nations either worthless or dangerous. Hence they are remarkably destitute of curiosity and a desire for improvement. A spirit of haughtiness and bigotry is cherished, and general benevolence is in effect prohibited. They believe also, agreeably to the doctrine of fatalism, that no efforts influence the course of events, and therefore exhibit peculiar indifference to disease and danger.

1171. Unlike all others, the *Christian Religion* inculcates benevolence towards all men, of every nation and of every religion.

It forbids every thing which inflicts suffering or evil, except for the safety of society. It requires the practice of every thing by which we can promote the welfare of others. Where its precepts are obeyed, it produces mutual kindness and good will among men, and prevents those crimes which destroy their peace. Although it is corrupted in many, and imperfectly practiced in all countries where it prevails, it still meliorates the state of society; it banishes barbarous and cruel customs; and diminishes even the rigor of despotism.

It is almost exclusively in Christian countries, that we find provision made for the poor and the feeble, in *public alms-houses and hospitals;* and none but Christians seem to have thought of attempting to alleviate the miseries of other nations, or to communicate knowledge to the ignorant by means of charitable institutions

CONDITION OF FEMALES.

1172. The civilization and character of a nation are intimately connected with *the condition of the female sex.* When they are permitted to exert their proper influence, it tends to prevent ferocity and cruelty of manners, and check licentiousness; and the early education of children devolves so much upon them, that the progress of society must be materially affected, by the state of improvement among them.

It is common *among Mahometan nations* to consider women as beings without souls, made only to be the slaves of man, and the instruments of his pleasure. *Pagans* generally place them in the same rank with their domestic animals, and treat them in the same manner. *In China* they are often obliged to drag the plough; and they usually perform the most severe labors.

In Half-Civilized countries, those who do not labor, are bought and sold, and treated as prisoners and slaves, receiving no instruction except in music, embroidery or dancing. They are not usually permitted to have intercourse with society, and are not considered capable of mental improvement.

1173. The *Christian Religion* alone, declares females to be immortal beings—recognizes their equality with men—and vindicates their claims to respect. As the natural result, it is in Christian countries only, that they are placed in their proper rank; but their situation varies even in these.

In a large part of *Germany, Austria, Poland and Russia*, women of the lower classes are still employed in severe labors, which properly belong to the other sex; and even in Sweden, they often labor in the field. In most nations of Europe, music, dancing, and other personal accomplishments, are considered the only important acquisitions, even for the higher classes.

1174. *England, Scotland*, and the *United States* appear to be the only countries, in which attention is generally paid to the intellectual improvement of females; and the general standard of purity, in morals and manners, is more elevated than in any other nations.

The greatest attention is probably paid to female education in the United States, and numerous institutions have been established for this object. Some of these furnish an education as complete in the most important and practical branches of knowledge, as the literary institutions designed for the other sex. None of them have that permanency of character, derived from funds or legislative patronage; and amidst the variety of state institutions, for every class of the ignorant and unfortunate, not one has been founded and endowed for the instruction of females.

AGRICULTURE.

1175. The *state of agriculture* is connected with the state of society and the knowledge and freedom of a people.

Among *Savage nations* it is scarcely known. In their native state, they have no instruments of metal for this purpose, and their wandering mode of life forbids their attention to it, as a regular employment. They prefer hunting and fishing, and depend chiefly on the products of these, and the spontaneous fruits of the earth, for their subsistence.

The *Indians of North America* were in the habit of planting maize or Indian corn to a very limited extent. Rude implements of stone were formerly their only tools; and the labor was assigned to the women. Those who remain uncivilized, are accustomed only to open the ground very slightly; and never occupy the same spot long enough to exhaust its strength.

The savage nations in the *hot countries* of South America, Africa, the Asiatic Islands, and Polynesia, scarcely attempt cultivation. The spontaneous productions of the earth, are amply sufficient for the support of the scattered inhabitants.

1176. Among *Barbarous nations*, the Arabs, Moors, Tartars, and others who lead a wandering life, subsist chiefly on the milk and flesh of their cattle, horses, sheep, and camels. These tribes often possess large herds of cattle, and are continually roving from place to place in search of water and pasturage. They rarely attempt cultivation, and depend chiefly on such roots and vegetables as they find growing spontaneously. When they raise grain, they only remain in one spot long enough to sow and reap a single crop; and despise those who are willing to settle and cultivate the same ground from year to year.

1177. The Barbarous nations who inhabit the *Torrid Zone*, in Africa, Asia, and Polynesia, have ample supplies of food without any labor; and when they cultivate the earth, they have only to sow their seed and gather their crops. In these, as in all other barbarous nations, the labor is assigned to the women; the implements are rude, and little skill is needed or desired. In Africa, maize, rice, millet, yams, and plantains are considerably cultivated; and cotton also, which is manufactured into clothing.

In *Polynesia*, the taro-root, and the bread-fruit tree are important articles of food, and are raised as substitutes for grain. Among these nations, all the land belongs to the kings and chiefs, who can at any time seize it with its produce; and therefore there is no inducement to raise more than a necessary supply.

1178. Among Half-Civilized nations, the *Chinese and Japanese* have been led by the pressure of a crowded population, to the

highest perfection in agriculture, as a practical art. In these countries, *rough grounds* are levelled, and even the sides of mountains are terraced, so that scarcely a spot is left uncultivated. They collect and preserve every thing that can be used as *manure*, even to the parings of the beard. Still they are ignorant of many important *principles and improvements*, found among civilized nations.

Both in China and Japan, the art is honored and patronized by the emperor; and in China, he goes annually into the field, and gives a feast in honor of agriculture. In Japan, uncultivated land may be occupied by any one who will till it.

1179. In *India, the soil* is fertile beyond that of most portions of the world. In the level regions on the Ganges and other rivers, at a great distance from the sea, it is a pure mould, watered by numerous streams; and in that hot climate, vegetation is so luxuriant, that it has been styled the garden of the world. *Cultivation* is easy, and no efforts are made at improvement. *Rice* is the principal support of the people.

Wheat and barley are cultivated in the more northern, elevated districts, bordering on the mountains, particularly Nepaul, Bootan, and Assam. Rice is raised in low lands, where water can be introduced to cover it, at certain periods of its growth. There are generally two crops in a year: one of rice and one of millet or pulse. Sometimes the crops are cut off by floods or drought, and dreadful famines ensue. In one of these, 3,000,000 probably perished, without the possibility of relief.

COUNTRIES ON THE MEDITERRANEAN.

1180. In *Western Asia and Northern Africa*, agriculture has probably been longer practised than in any other parts of the world; but among the Half-Civilized nations now occupying these regions, it has declined instead of improving by the lapse of ages.

In *Turkey and Persia*, the extortion of oppressive governments, and the frequent incursions of the robbers who inhabit the mountains, have discouraged effort; and these countries, which are naturally superior to most others in the world, are now among the least productive in the same latitude. The climate is so hot and dry, that irrigation is necessary, and often difficult; and many of the ancient canals for this purpose, have been suffered to decay.

The forests also have been entirely removed, and the sources of springs dried up. Tracts which were once very fertile, have thus been reduced to barren wastes, and even to deserts; and many spots which once contained a crowded population, like that surrounding the ancient Babylon, are now scarcely habitable. The same remarks are applicable to a part of *Arabia*.

No *improvements are made* in these countries, but the same rude implements are in use as in ancient times, and grain is still trodden out by cattle. *East Persia* has a similar state of agriculture,

and the difficulty of tillage is increased by its dryness. The *Arabians* pull up their harvests by the roots, and cut their forage with a sickle. The Turks not only neglect agriculture, but despise it.

In all these countries, wheat, rice, cotton, and the sugar cane are *articles of culture;* and in Arabia, the finest coffee is raised, especially in the south.

1181. *Lower Egypt* derives so rich a soil, from the slime left in the annual inundations of the Nile, that it produces abundant crops with very little labor. The water of the river is conducted by canals, or raised by machines, to every part of the vale of the Nile. Great quantities of excellent wheat as well as rye are produced, and there are usually three courses of crops in a year, in the Delta. The character of the *government* has been much improved within a few years, and this leads to the hope of an improvement in the state of the arts. *Cotton* is now an important product and article of export.

1182. *The Barbary States* generally resemble Turkey in their agriculture, from the influence of the same causes; but the greater extent of their commerce and navigation has led to more industry in this, and all other arts.

The same characteristics extend to *Turkey in Europe;* and indeed to the whole of southern Europe in some degree.

1183. *Spain, Portugal, and the south of Italy*, like the regions which have been described, have a soil of great fertility, and a warm climate, so dry as to render irrigation necessary. Like them, they have been subject to an oppressive government, which has palsied the efforts of industry, and checked the ardor of enterprise and improvement.

Sicily, which was once the granary of the Roman empire, now pays large sums annually for imported grain. Large tracts of land lie waste, and the villages of the interior are very scantily supplied with bread. The *Islands of Sardinia and Corsica* are in a state much worse. The former is a waste, cultivated only in a few spots, the number of cattle and sheep is small; and the oppression of stewards discourages all efforts in the peasantry.

The south of Italy, with a luxuriant soil, loses half its value from the wretched system of agriculture. A considerable portion of the *Roman States* is left uncultivated. The *western parts*, forming the Maremma and the Pontine Marshes, are very fertile, and produce excellent pasturage; but are almost uninhabitable on account of their pestilential air. The country for some distance *around Rome*, which is said to have sustained a population of several millions in ancient times, is now a barren waste, where the traveller will not see a cottage, or a cultivated spot, for miles *Spain* and *Portugal* are in a state similar to that of Italy.

1184. In these *countries*, as in others mentioned *on the Mediterranean*, the ancient system of agriculture is pursued, without any attempt at improvement. The *plough* is a crooked, heavy piece of timber, to which the oxen are usually fastened by the horns, and cuts the ground to a very small depth. Little care is taken, in *the collection of manure, or the preservation of the land*, except in vegetable gardens. The adaptation of plants to various soils, is not understood; and the importance of a succession of different crops is unknown. The grain is still trodden out by oxen; and all the operations of agriculture are marked by similar rudeness.

1185. *Wheat* flourishes in all these countries, and forms an article of export from Egypt to Barbary, and some parts of Asia Minor. The grape, the fig, and the date are cultivated and dried, for food and exportation. The *vine* is an important article of culture, for the manufacture of wine. In Christian countries, this forms the chief drink of the people; and is produced in considerable quantities for exportation, especially in Spain, Portugal, and Sicily. The *olive* is one of the most precious fruits of the countries on the Mediterranean. It is cultivated with great care in all of them; and the oil pressed from it is generally used as a substitute for butter, as well as in lamps. Considerable quantities are exported, especially from Italy.

The *barilla plant*, or sea-weed, is an important product of the coasts of Spain and Italy, and some other parts of the Mediterranean. It is burned into a coarse mass of ashes, called barilla, from which soda is obtained by a refining process. The Spanish province of Murcia alone, yields 9,500 tons of barilla annually.

Spain is distinguished for its vast flocks of *sheep*. They travel from province to province, and are permitted by a code of laws, called the Mista, to feed wherever pasture can be found. Five millions belonging to the inland provinces, are continually roving during the spring and summer, in flocks of 10,000. In the provinces on the coast, there are 8,000,000 more, which are stationary. Wool is of course an important product of Spain, and is raised for exportation; as it is in Barbary also.

MIDDLE REGIONS OF EUROPE.

1186. In all the *north of Italy*, the state of agriculture is far better than in the south, apparently in consequence of a less oppressive government. Irrigation has been practised from an early period, and with great success. Some of the canals are more than 30 miles long, and 50 feet wide. Wheat, the olive, and the vine, are the most important articles of cultivation.

In *Tuscany*, *Lucca*, *Modena*, and *Parma*, industry and improvement are encouraged. The country is divided into small farms. Every acre seems to be occupied for grain, or vines, or olives, and a population of 200 to the square mile is supported.

Lombardy, or Austrian Italy, which forms the basin of the

Po, is extremely fertile; and requires but a simple system of agriculture. The principal labor is that of distributing the water of the numerous streams over the plains. The whole country appears like a continued garden. The *dairies* are a source of great wealth, and the pastures are thus rendered as valuable as tilled land. The celebrated Parmesan cheese is exported from this region, to the value of 200,000 dollars annually.

In *the Milanese*, which lies also in the basin of the Po, divided between Austria and Sardinia, and in *Piedmont* which lies wholly in Sardinia, the state of cultivation is nearly similar. The landlord and tenant divide the expenses and profits of the year.

1187. *Switzerland*, on account of the roughness of its surface, is best adapted to pasturage, and this is the chief dependence of the people. There is no defect of industry. *Cultivation* is extended to the most rugged and barren spots which permit it; and *barley* is raised even to the edge of the glaciers. Still the *supply of grain* is insufficient for home consumption. In some districts, the inhabitants are almost strangers to the use of *bread*, and subsist on the produce of their dairies.

In some of the valleys, and on the southern sides of the mountains, the *vine* is cultivated with success.

1188. *The middle countries of Europe*, extending from the Warm, through the Temperate, to the Cold Regions, may be termed in reference to the agricultural products, a region of grain and vines. In the *southern parts of France, Austria, and Russia*, which enter the warm regions, the olive is an important article of culture. The *vine* is cultivated for the manufacture of wines in the middle portions. *Wheat and rye* are raised in great quantities, especially on the southern shores of the Baltic.

1189. In *Russia* and *Poland*, the enslaved state of the peasantry, and the ignorance which generally prevails, have prevented any considerable progress in agriculture.

In Poland especially, the state of cultivation is wretched; the crops are very scanty, compared with the fertility of the soil. The use of *manure* is unknown, and the fields are tilled until they are worn out. The *plough* only scratches the surface of the ground. The water is suffered to stagnate on the pastures, till they are converted into marshes. Yet *grain and cattle* are raised and exported to a considerable amount.

The state of agriculture in *Russia* is nearly similar. It abounds in extensive steppes, often covered with grass growing to the height of a man, which form valuable *pasturage*, and render the cultivation of meadows unnecessary. *Grazing* is the most common occupation. The inhabitants of the south and east, who are chiefly *Tartars*, do little else than tend their

flocks and herds. *Sheep* are so numerous, that in the southern provinces, a common Tartar often possesses 1,000; and a rich man 5,000. Although the *tillage* is wretched, the soil, like that of Poland, is very productive. *Hemp and Flax* are important articles of culture for exportation, in most parts of Russia. The *potatoe* is raised even as far north as Archangel. The middle and south of Russia abound in *fruit-orchards*, which supply the empire. Some of the species of apples are remarkable for their size and flavor.

1190. In *Austria, and some parts of Germany*, agriculture is more advanced than in the south of Europe; but still remains in a very imperfect state. Much valuable land is left uncultivated; and scarcely any is sufficiently tilled to produce plentiful crops. The instruments of husbandry are rude, and its ancient practices are retained, in place of modern improvements.

In *Prussia* and most of the states of Germany, great improvements have been made, and agriculture is in a good state. Generally the tillage is best, where the government is most free and mild.

Prussia and Northern Germany, like Poland, raise large quantities of wheat and rye for exportation. The vine is cultivated, and furnishes some wine for exportation in Middle and Southern Germany, and Austria.

1191. *France* is one of the finest countries in the world in soil and climate. In agriculture, it is much inferior to England. One-fifth more is produced on the same surface in England than in France. In the south, the practice of treading out the grain with oxen is still retained; and many similar customs are continued, without improvement.

One-half of the whole surface of France is *arable land*. One-fourth of the remainder, or one-eighth of the whole surface, is occupied by forests; about the same quantity by *pastures* and meadows; $\frac{1}{8}$ by towns, roads, rivers, &c.; and $\frac{1}{8}$ is waste land. Great quantities of *wheat* are raised here, and the price of bread is lower than in England. The *vine* is a valuable article of culture in the middle and southern portions; five millions of acres are covered with vineyards; and large quantities of wine are exported, especially of Claret and Champagne. The *olive* is also an important fruit in the southern portion, lying on the Mediterranean.

1192. *Belgium*, (late the southern part of the Netherlands,) has been celebrated for 600 years, for the fertility of its soil, and the perfect state of its agriculture. It still shares with Lombardy and England, the title of the garden of Europe. A thin crop is rarely to be seen. By judicious changes of crops,

and great care in extirminating weeds, the land is kept under *perpetual cultivation;* and the labors of a part of the inhabitants support a *population* of 215 to a square mile. Hemp and flax are extensively cultivated.

1193. *Holland*, (late the northern portion of the Netherlands,) is chiefly devoted to pasturage, which is remarkably fine. It is unfit for the cultivation of *grain* on account of its moisture, and the inhabitants are chiefly supplied from abroad. They pay great attention to their *dairies*, and make great quantities of butter and cheese for exportation.

They are so attentive to the warmth and cleanliness of their *cattle*, that they frequently clothe them when they are feeding in the pastures. Their cattle and horses are remarkably large and fine; and they fatten great numbers of lean cattle from the interior of Europe. *Madder*, a root used in dying, and *tobacco* are extensively cultivated. The Dutch have also paid great attention to the cultivation of flowers; and have furnished some of the most beautiful in the gardens of Europe.

BRITISH ISLES.

1194. In *England*, a great amount of capital is employed in agriculture; and a dense population has given great encouragement to it, by the high price and ready sale of provisions. Great efforts have also been made to improve the system, by means of numerous societies, and the distribution of premiums for useful discoveries; and scientific men have made it more an object of study than in any other nation. From these causes, it is superior to that of most other countries, and the products of the field and the dairy are peculiarly rich and abundant.

Wheat is the most important article of culture in England. Extensive *orchards* are found in some districts; and large quantities of cider are made. The whole number of acres in England and Wales is estimated at 37 millions; of which six millions are *waste lands*. About sixteen millions are devoted to *pasturage*. Twelve millions are under actual *tillage;* of which three millions are supposed to be devoted to wheat.

New instruments and new modes of culture have been devised, which have greatly diminished the labor. A succession of crops has been adopted instead of fallows, by which the land may be perpetually tilled, and still improve in its quality. Much attention is also paid to pastures and meadows.

The breeds of horses and cattle have been improved with great care, and have reached a high degree of perfection. The sheep are estimated at more than 20 millions. Much attention is also paid to the planting and rearing of fruit trees, and of timber, especially for ship building.

1195. The soil of *Scotland* is various, but a large portion of the country is rough and barren, and the climate is very unfa-

vorable to tillage. It was for a long period remarkable for producing the best gardeners, and the worst farmers in Europe.

The highlands are chiefly devoted to pasturage. Some of the rougher tracts are now rendered productive, by the cultivation of forest trees for timber.

In the lowlands, agriculture has been greatly improved within half a century, chiefly by the efforts of scientific men and agricultural societies. It is now conducted with great skill, and with more success than the climate would lead us to expect. Barley and wheat are cultivated; but oats is the chief grain raised for bread by the common people.

The cultivation of *gardens* has been a particular object of attention in Scotland. Notwithstanding the inclemency of the climate, all kinds of garden vegetables, and the finest fruits of temperate climates are produced, nearly in the same perfection as in their native soil, by means of sheltered walls, and hot houses.

1196. Agriculture is less advanced in *Ireland* than in England. Industry is discouraged by the oppression of the *middle men*, who rent lands from the owner, and then distribute them in small parcels to the peasants. The peasants are so poor that they have no opportunity of making improvements. The *implements of husbandry* in most counties, are still of the rudest kind. The plough requires great labor, and performs the work very imperfectly. *Wheat* is sparingly tilled, and is inferior to that of England; but of late years there has been a sufficient quantity raised to admit of its exportation. *Oats* is more cultivated than other grains, but *potatoes* are the chief article of subsistence in Ireland, and are remarkably fine. A failure of this crop produces a famine among the peasantry. *The greater part of Ireland* is devoted to grazing. Large quantities of butter, beef, and pork, of excellent quality, are prepared for exportation.

NORTHERN EUROPE.

1197. In the most *northern, or Frozen Regions of Europe above* 60° *or* 63° of latitude, the climate prevents the tillage of grain almost entirely, or renders the crops very precarious. Throughout these countries, only rye, barley, and oats can be raised. In *Norway and Sweden*, the crops are often so scanty, that the people are obliged to mix the powdered bark of trees with their flower for bread. The *potatoe*, however, is cultivated far to the north. *The most valuable products* of the earth are the timber of their forests, and the tar, turpentine, and pitch, obtained from their pines and firs.

1198. *Denmark* is a level, and to a considerable extent, a fertile country. Its latitude and peninsular situation, give such mildness to its climate, that it produces most of the necessaries of life in abundance. The raising of *horses and cattle* for ex-

portation, is an important branch of their agriculture. The general *state of tillage* has been much improved within half a century. *In the south of Denmark*, and in the German Duchy of *Holstein*, the mode of cultivation and crops resemble those of England. *Garden vegetables* are easily raised, and form an important part of the food of the peasantry. *Hemp, flax, and tobacco* are extensively cultivated; and *apples, pears, plums, and cherries* are abundant, both for home consumption and for exportation.

1199. In *Norway*, the rugged surface and dreary climate are great obstacles to tillage, and the people are dependent on other countries for grain. Great exertions, however, are now made for the *improvement* of agriculture. They have excellent *pastures*, and are thus enabled to rear and export cattle in considerable numbers.

In *Sweden*, only $\frac{1}{50}$th part of the southern provinces, or $\frac{1}{50}$th part of the whole kingdom is arable land. A large part of the country is covered with forests. The quantity of grain annually sown is small; and the produce seldom more than five fold, although agriculture is conducted with a considerable degree of skill. The whole quantity of grain raised, amounts only to $\frac{1}{8}$th of a bushel for each inhabitant annually.

The state of *Northern Russia* is very similar to that of Norway and Sweden, except that the utmost limit of cultivation is farther south. *Asiatic Russia* is even more dreary; and tillage is practicable only on the southern borders. Precarious crops of *grain* are raised here; and in some parts of the district, south of the Volga, the *vine* and *olive* are cultivated.

UNITED STATES.

1200. *The United States*, and its territories, were so recently settled, and fertile land has been so abundant, that there has been less inducement than in Europe, to improve the methods of tillage. It has been too common to cultivate lands in an imperfect manner, until they were worn out; and then clear up new tracts of forest, or emigrate into the unsettled and fertile country, west of the Apalachian Mountains. The rich, vegetable mould which accumulates in a forest, affords for many years so rich a soil, that abundant crops are produced with very little care. Hence the agriculture is much inferior to that of England, although far superior to that of most parts of Europe. In the older states, great efforts have been made of late years, and considerable improvements effected.

With regard to the products of agriculture, the United States may be divided into *four regions*, corresponding to those of climate: the northern or grazing region—the middle or wheat

region—the warm or cotton region—and the tropical region, on the gulf of Mexico, producing the sugar cane.

1201. *New-England and the northern parts of New York* are best adapted to grazing, from the soil and face of the country. Butter, cheese, cattle, and provisions, are the chief products, and large quantities are exported. Great numbers of sheep are raised, and a considerable quantity of wool is furnished for manufacture. New-England is divided into small farms, which are generally tilled in a neat and skilful manner. *Wheat* was formerly cultivated; but it has become a precarious crop of late years, and rye is the principal grain now raised. Large supplies of wheat are obtained from the middle region. Maize or Indian corn and potatoes are among the most important vegetable products. Barley, oats, and buckwheat, and the garden vegetables yield abundantly. *Orchards* are numerous in most parts of New-England; and cider is the common drink of the inhabitants. The *peach* is raised with difficulty; but other fruits of the Temperate Regions are abundant.

Maine, *New-Hampshire*, and *Vermont*, are only in a partial state of cultivation. The extensive forests furnish large quantities of timber and potash for exportation.

The northern part of Rhode Island is sterile; but *the islands and coast* of Narraganset Bay, are among the most fertile and well-cultivated spots in the United States, and are celebrated for excellent cattle, and numerous flocks of sheep.

Massachusetts is considered the best cultivated state in the Union, except Pennsylvania; and much advance has been made by means of agricultural societies, and the premiums offered by them. *Connecticut* has commenced a similar course of improvement.

1202. *The middle, or wheat region*, comprises the southern and western parts of New-York, New-Jersey, Pennsylvania, the states north of the Ohio, Delaware, Maryland, Virginia, and Kentucky. In New-York, New-Jersey, Pennsylvania, Delaware, and the neighboring portions of Maryland and Virginia, tillage is generally conducted with skill.

Pennsylvania was the first state in the Union in which agricultural societies were formed, and doubtless holds the first rank in agricultural improvements. These have been chiefly made in the *south-western parts*, between the Delaware and the Blue Ridge. Much of the *northern and western parts*, is still covered with forests. In this state was first introduced the practice of manuring with clover, which has so much enriched the soil of that, and all the neighboring states. It is raised by means of plaster of Paris, in luxuriant crops, and is then ploughed into the soil

In *Maryland and Virginia*, much less attention is paid to agriculture; and lands are frequently worn out and deserted for want of care. The *valley of the Shenandoah*, west of the Blue Ridge, is superior in tillage to the surrounding country.

In the Western states on the Ohio, the native richness of the soil is not yet exhausted; and without the aid of an improved system of agriculture, the crops are far superior to those of the best cultivated states on the Atlantic.

1203. The *wheat* of the middle region is the finest produced in the United States, and is the third article in importance among our exports. *Maize* is raised in great quantities, and rye, oats, and buck-wheat are abundant. *Tobacco* is extensively cultivated in Maryland, Virginia, and Kentucky, and next to cotton, is the most valuable article of export from the United States. *Hemp* was formerly cultivated extensively in Kentucky; but of late, it has been exchanged for tobacco, as a more profitable crop.

In the states on the Atlantic, *orchards* are numerous, and great quantities of cider are made. The *cider* of New-Jersey, (especially of Newark,) is much celebrated, and often rivals the Champagne wine of France in sprightliness and flavor. *West of the Apalachian Mountains*, orchards are more rare, and large quantities of grain are raised for the distillation of spirituous liquors. The *peach* is abundant in Virginia, Maryland, Delaware, New-Jersey, Ohio, the southern parts of Pennsylvania, and the western parts of New-York. Extensive orchards are cultivated in Virginia, for the manufacture of peach brandy. Pears, cherries, plums, and other fruits flourish in most parts of this region. The wine grape is cultivated in some places; and at Vevay, on the Ohio River, extensive vineyards have been planted by a colony of Swiss, for the manufacture of wine.

1204. In New-York, Pennsylvania and New-Jersey, the *rearing and fattening* of cattle is an important branch of agriculture; and the products of the dairy are very fine. In Virginia, and the Western States, great numbers of *swine* are raised in the woods for provisions, and large quantities of pork are exported from the Western States. Droves of *horses* and *cattle* are also sent from the Western into the Atlantic States. The winters are so mild that they usually require no shelter, and little fodder.

1205. *The warm or cotton region* of the United States, commences in Tennessee and the Southern parts of Virginia, and extends to the Gulf of Mexico.

In all the *states* lying *south of Pennsylvania* and the River Ohio, *the land is tilled* almost entirely by slaves. In consequence of this, agriculture is much more imperfect than in the northern states, where the proprietor himself is usually employed in the labors of the field.

Cotton is the chief article of culture in this region, and yields great profit to the planter. It is raised throughout Virginia for home consumption, and has been found to flourish still farther north. Rice and maize are the principal *grains* of the cotton region. *Maize* is the principal food of the slaves in these states, and in Virginia. *Rice* is exported in considerable quantities. Wheat and rye are little cultivated, except in the hilly country. *Barley, oats, hemp, and tobacco* flourish here. *Indigo* has been cultivated to a great extent, especially in Georgia and South Carolina; but the profits arising from the crops of cotton, now lead to the neglect of all others. The *potatoe* cannot be cultivated to advantage in this region; and the *sweet potatoe*, a plant of a different species, is generally substituted.

Peaches are abundant and fine. *The fig and pomegranate* are also raised in South Carolina, and the *orange* and *lemon* grow in some parts of the state. *Apples, pears*, and other fruits of the Temperate Regions degenerate in the low country.

The cotton is of two kinds. The black-seed, or sea-island, is by far the most valuable; but it can be raised only in a few districts, and chiefly on the low islands which line the coast of the Southern States. The green-seed, or upland cotton, requires so much labor to separate it from the seed, that it was not worth raising until the invention of the cotton gin, by Eli Whitney, Esq. of New Haven, Conn. Before this time it was an article of small importance; but now it forms half of the exports of the United States; exceeding in value all the other products of the field and the forest.

1206. *The tropical region* embraces Louisiana, Florida, and the southern parts of Georgia, Alabama, and Mississippi. *Sugar* is here an important article of culture, and an object of increasing attention. *Coffee* may also be raised; but has not yet been cultivated to any extent.

Maize produces luxuriant crops, almost without cultivation; but the inhabitants of the whole region lying on the Mississippi and Gulf of Mexico, south of Kentucky, depend chiefly on the states on the Ohio River for *supplies of grain*, and are occupied more profitably in the culture of cotton or sugar. Great numbers of *cattle* and *swine* are raised and fattened in the woods with very little care. The *orange, lemon, and fig*, are found in this region in perfection; and it is not improbable, that this tract of country may supply the northern states with sugar and coffee, and most of the important productions of the tropical regions.

MEXICO AND SOUTH AMERICA.

1207. In the *Spanish and Portuguese colonies* of North and South America, several causes have combined to prevent improvements in agriculture. The natural *indolence* of the Portu-

guese and Spaniards has been increased, by the enervating influence of a warm climate, and the discouragements arising from an oppressive government. The *passion for mining* has produced a general distaste for the more slow, but certain profits of agriculture; and it is peculiarly neglected in the mining regions on this account. In addition to this, the exportation of their productions has been prohibited, and even the cultivation of the olive, and some other articles, has been forbidden, in order to compel the importation of them from Spain.

1208. In *Mexico*, the articles of cultivation depend entirely on the temperature, as determined by the elevation of the land. At various heights, all the productions of the Torrid and Temperate Zones may be raised. In the *lower districts* bordering on the sea, the plantain or banana, the manioc, and the cassava root, are cultivated. The *more elevated regions* produce excellent wheat. *Maize* flourishes both in the hot and temperate regions, and is the principal article of subsistence. The soil is productive, and *the chief difficulty* arises from the dryness of the climate. This often destroys the crops, and produces a distressing famine.

1209. Those parts of *South America* which lie *between the tropics*, have that rich luxuriance of vegetation, which is common to fertile soils in the Torrid Zone. Very little labor is required to produce all the necessaries, and most of the luxuries of life. *Rice, plantain, and banana*, are the chief articles of subsistence. *Coffee, sugar, cacao*, (or the chocolate-nut,) *and indigo*, are important articles of culture. The most delicious *fruits* are abundant. But with all these advantages, the inhabitants want many comforts enjoyed by the inhabitants of more sterile countries and severe climates. All the *labor* is performed by Indian and Negro slaves. In consequence of this, all their farming operations are marked by the imperfection arising from ignorance and indolence. No care is taken to preserve the fertility of their lands. No *enclosures* are made, and every thing is suffered to decay until it is useless. After the crops are gathered, the most valuable productions of the earth are often destroyed, for want of careful preservation. These remarks are especially applicable to Brazil. *Dairies* are scarcely attended to, and cattle are miserably managed.

1210. *The pampas or plains of Brazil and Buenos Ayres* feed vast herds of horses and cattle, which require the attendance of only a few herdsmen. They furnish an inexhaustible store of provisions, and also large quantities of hides and tallow for exportation.

The more elevated regions of South America, and those lying in the Temperate Zone, including the mountainous region of Peru, Chili, and the greater part of La Plata, produce wheat, orchard-fruits, and other productions of temperate climates, and the state of cultivation is somewhat better. The *mining districts* procure their supplies of grain from the surrounding country; and Peru is entirely dependent on Chili for bread-stuffs.

(II.) ROADS.

1211. The state of *public roads*, is important to commerce, and the improvements of society; and generally corresponds to the state of agriculture.

Among Savage and Barbarous nations, no roads exist but the beaten paths, which are formed by the frequent passing of travellers in the same direction. These nations are guided in their wanderings by the stars, or the skilful observations they make on the objects in view; or sometimes by the marks left in former journeys. Their roving habits render it easy for them to discover and to pursue the most intricate and difficult routes; and their jealousy leads them rather to destroy all traces which may serve as guides of others, than to attempt to render communication easy.

1212. *In nations which are advancing to civilization*, the introduction of commerce leads to the establishment of roads, and the ease of communication thus produced, renders them alternately the cause and the consequence of improving the state of society.

The same causes which have operated to depress the agriculture of the *Half-Civilized* nations of Asia, have led to the neglect of roads. They travel only on camels or horses, in Arabia, Turkey, Persia, and Northern Africa; and in India, on elephants, or in palanquins, or couches carried by men. The roads are usually narrow paths, often very difficult to travel. The energy of the government and industry of the people in *China and Japan*, have led to the construction of numerous roads. Some of those in China, are remarkable for their bridges and excavations.

Turkey in Europe is almost as backward in roads as Western Asia. *Spain and Portugal* are very deficient in this respect; and there are comparatively few routes in Spain on which it is safe and convenient to travel in carriages.

1213. *The character of roads depends* much on the geological structure of a country. The rugged and rocky surface of *primitive regions* presents considerable difficulties in the construction of roads; but if well made, they are more permanent than those of other formations. In *transition, and secondary* regions, there are, therefore, fewer difficulties. A soil of *loam* or gravel furnishes good roads at very little expense. In *sandy regions* it is difficult to render them otherwise than heavy. In *rich alluvions*, they are almost necessarily bad, especially during the wet season, as the soil offers no resistance to the impression of wheels. The roads of dry tracts are of course better and more permanent, than those of moist regions.

1214. *In the Cold and Frozen Regions* of North America, Europe and Asia, the snows form permanent and excellent paths for sledges during the winter; and this season is usually chosen for travelling and transportation. Hence there is less necessity for the construction of artificial roads in these regions; and where they are made, they are protected from injury in the winter, and it is easy to keep them in repair. The roads of Sweden are excellent. Those of Russia are not so good. The rugged character and severe climate of Norway scarcely admits the construction of roads; and the passage of the mountains is attended with great difficulty and danger.

1215. *In the Temperate Regions*, the frequent thaws and prevalent moisture of winter and spring, usually render the roads very bad during these seasons; and difficult to be repaired in summer. These difficulties are in some instances

counteracted by the dryness of the climate, as in some parts of France, or by the progressive effects of labor, in a country long since civilized, as in Germany.

Italy, and the middle countries of Europe, are traversed by numerous roads, generally very good, and many of great antiquity. The bridges are usually constructed of stone; many of the roads are paved; and there is an aspect of permanency which is not found in those of a new country, like the United States. The most important roads of Italy are founded on the ancient Roman Ways, which were so well constructed, that after the lapse of fifteen centuries, some parts are still entire. The principal was the Via Appia, leading from Rome to Naples, upon which the modern road between these cities is constructed.

1216. *The passes of mountains* present the most serious difficulty in the construction of roads; and we cannot expect to find them good, except in countries which are populous, and have long been inhabited by civilized nations.

There are more than fifty roads over the *Pyrenees*, including those for pedestrians; but seven only are passable for carriages. The ascent on the side of France is easy; on the side of Spain it is more steep and difficult.

A number of fine roads have been constructed across the *Alps*. *Mount St. Gothard* is passed by a road for horsemen, at the height of 6,700 feet. The *Maritime Alps* of the Sardinian States, are crossed by a fine carriage road, ascending 8,000 feet, and leading the traveller above the clouds. But the passages of Mt. Simplon and Mt. Cenis, constructed by the late Emperor Napoleon, are the best and most celebrated roads over these mountains.

Mount Simplon was formerly impassable by carriages. In 1801, a road for carriages and artillery was commenced, and was completed by the labors of 3,000 men, in 1805. Fifty bridges were necessary to cross the tremendous chasms; the road was often cut in a bed of rocks, and six vaulted passages or galleries of considerable length, were dug through portions of the rock, which could not be otherwise passed. Parapets and walls, some of them 200 feet high, were erected to secure the road from the effects of torrents and avalanches. At convenient distances, houses of refuge were built, to protect travellers from storms, and occupied by cantonniers, whose duty it was to accommodate them, and to keep the roads in order. The whole distance is 36 miles, and the highest point is 6,000 feet above the level of the sea; but so well is the road constructed, that it may be easily passed in a carriage in eleven hours.

A similar route was formed over *Mount Cenis*, in 1811. The elevation is nearly equal to that of the Simplon. It has an equal number of galleries; one of which is cut through a mass of granite, 2000 feet in length.

1217. *Great Britain* is traversed by numerous roads in every direction. In the mountainous districts of Scotland and Wales, they are often very bad; but those of the level districts are generally constructed in the best manner, and furnish a rapid and easy communication with every part of the kingdom. The bridges are well built, usually of stone; and a number have been constructed of iron, which unite great strength with extraordinary beauty and lightness.

The roads of *Ireland* are generally excellent; and were superior to those of England, fifty years since.

1218. *The public works of European nations*, are the result of labors which have been going on for 15 or 20 centuries. *Those of colonies and newly settled countries* must of course be less advanced; and are often entirely neglected, on account of the difficulty of subduing the soil, and procuring the means of personal support and comfort.

The valuable commerce of *South America*, has led to the construction of roads from the seaports to the mining and other important districts; but they are generally very poor, and can be travelled only by mules.

Several have been made across *the Andes*; but from the tremendous difficulties of the route, and the want of skill and perseverance in the architects, the passage is usually difficult and dangerous. They are often constructed on the side of a mountain, where a single misstep would precipitate the traveller to an immense depth. The numerous chasms and torrents are crossed by means of bridges formed of ropes. These frail structures wave and vibrate with the wind, and the motion of the traveller, so that only those who are experienced can pass

them with safety. In other cases a cable is stretched from side to side, and the travellers and mules are suspended to it, and drawn over by ropes. The torrents produced by storms, or a sudden melting of the snows, often destroy those who have escaped other dangers.

The pass of Quindiu, between Popayan and Bogota, is the most difficult. The highest point is 11,000 feet above the sea, or 8,000 above the foot of the mountain. No hut is to be seen for ten or twelve days on this route. In many places, the path winds through chasms, some of which exceed half a mile in length, so narrow that mules cannot pass each other. In some parts they are covered with the carcasses and bones of animals which have perished from fatigue or accident.

1219. There are only eight or nine *roads between Chili and La Plata*, the best of which is impassable for carriages, and is so narrow that the traveller is often obliged to proceed on foot. Not a year passes, but some of the mules are dashed to pieces in its tremendous chasms.

The road from Lima to Potosi and Buenos Ayres is encompassed with similar dangers, although it forms the channel of an important commerce. The traveller in this, as in other passages over the Andes, is exposed to the utmost extremes of heat and cold, and undergoes dangers and privations of every kind. The path is often so steep and narrow, that it is indented with deep holes, in which the mules may place their legs to secure them from slipping. Where these are wanting, the mules sometimes bring their feet together at the top of the descent, and slide down with inconceivable rapidity to the bottom, as the only means of security.

The whole distance over the Andes, from Lima to the plains of La Plata, is 1600 miles. From the foot of the mountains to Buenos Ayres, which is nearly the same distance, the road is level, and is travelled in covered wagons, drawn by oxen or horses.

1220. *The table-land of Mexico* is crossed by a number of roads, from ocean to ocean; but the ascent is so difficult, and the arts so little advanced, that they are generally very bad, and passable only for mules. The summit of the table-land is so level, that a carriage road has been constructed with very little labor, for a distance of 500 leagues, from Mexico to Santa Fe.

1221. *The United States* exhibit in a striking manner, the effects of free institutions and enterprise. Probably no nation has ever executed so many improvements in roads, bridges, and canals, over such an extent of country, in the same time.

Two centuries ago, the whole tract was a wilderness, covered with forests and traversed only by the foot-paths of the Indians. Now, there are roads constructed in every direction, to connect the villages, towns, and cities, which have sprung up in rapid succession. In 1790, the extent of post-roads was only 1875 miles; in 1827, it was 105,336. The number of Post-Offices now exceeds 8,000; and the mail is transported 40,000 miles daily. To describe all our roads, would require an enumeration of all the important settlements in the country. The principal are laid down on the map. A large number are public roads, constructed and repaired by the towns through which they pass; but the great roads are usually turnpikes, constructed by the state or incorporated bodies, and supported by tolls. Only their general character, and the most important routes, can be described.

1222. *The northern, primitive district of the United States*, including New-England and the northern part of New-York, falls within the Cold Region; and generally has permanent snows during the winter, as far south as latitude 42°, which render travelling easy, and protect the roads from injury. New-England, and the greater part of the Middle States, are intersected in every direction by roads, which are usually well constructed, and in good repair.

Pennsylvania has little advantage from the snow; and the rich, clayey soil, which is prevalent in some parts, renders the roads very bad during the winter. The same is true to a greater extent in *Maryland*. In Pennsylvania, about eight millions of dollars are invested in roads and bridges.

1223. *In the sandy, alluvial country of the Atlantic coast*, from New York to Florida, the roads are heavy, and not easily improved; but they rarely present the difficulties and dangers found in the roads of a rich country, after a wet season. The scattered state of population has prevented much attention to roads, in the

states south of Maryland: and frequent impediments are presented by the want of bridges and causeways, over the streams and marshes.

1224. *In the Western States*, the richness of the soil, the want of stone and gravel, and the moisture of the winter, render the construction of good and permanent roads almost impracticable. During the wet season, the difficulty of travelling is very great; and many roads are scarcely passable for wheel carriages. The travelling in these states is chiefly by steam boats, on their noble rivers.

The small streams are so variable at different seasons, that most of them can be forded during the dry seasons, and bridges are rarely built. The banks are high and steep, and the difficulty of passage is often very great. During high water, many of the streams become impassable, and the traveller encounters serious difficulties and dangers. Little has yet been done to improve roads; but in all these states except Tennessee and Kentucky, a portion of the proceeds of public lands sold by the United States, is appropriated to them, besides the usual taxes; and we may expect a rapid improvement in this respect, when these states become thickly settled. In *Louisiana*, the levees or dykes erected on the banks of the streams, form excellent roads.

1225. *The most important post-road* in the United States, is that which traverses the states on the Atlantic, a distance of 1800 miles, passing through all the principal towns, from Robbinstown in Maine, to Florida.

The principal roads from the Atlantic to the Western States, are the great western Turnpike of New York, from Albany to Buffalo and Erie—the road from Philadelphia, through Lancaster to Pittsburgh—and the Cumberland Road, from Washington City to Wheeling on the Ohio River.

1225. (*b*) A plan has recently been invented for constructing roads with iron bars, or railways, on which the wheels of carriages run so easily, that they may be drawn from 15 to 30 miles an hour, by means of locomotive steam engines. *Railroads* are now considered even more useful than canals, and are building in every part of England. The most remarkable is that from Liverpool to Manchester.

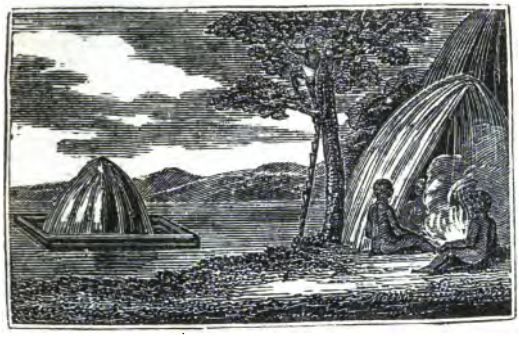
In the United States, within a few years, a large number of railroads have been made or projected, which will probably furnish the most cheap and rapid conveyance to every part of our country. The following are some of the most important which are constructed, or in progress. Those marked (*c*) are completed.

RAILROADS IN THE UNITED STATES.

c Charleston S. C. to Augusta	136	*c* Camden (Phil.) to Amboy	61
Decatus Al. to Tennessee R.	62	*c* Philadelphia to Trenton	25
c New Orleans to L. Ponchartrain	5	*c* to Columbia	82
c Petersburg (Va.) to Roanoke R.	59	*c* Over Allegany Mts.	36
c Portsmouth (Va.) to do do.	80	*c* New York to New Brunswick	28
Richmond to Petersburg	21	*c* to Paterson	16
to Fredericksburg	64	*c* Albany to Saratoga	36
Winchester (Va.) to Harper's Ferry	30	Schenectady to Utica	80
Baltimore to Washington	37	*c* Ithaca to Owego	29
to Columbia Rail R.	40	*c* Boston to Worcester	45
to Susquehannah R.	76	*c* Providence	43
c New Castle to French T.	13	*c* Lowell	25

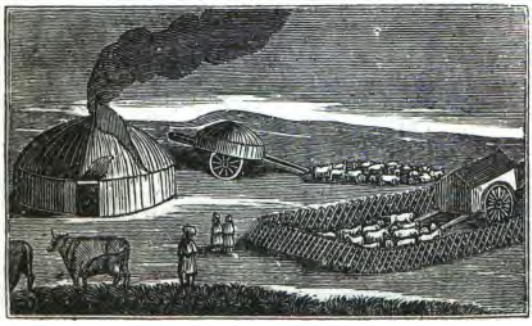
In addition to these, other important railroads have been proposed; as from Worcester to Albany—from Worcester to Hartford and New Haven; from Providence to Stonington, and from the opposite point of Long Island to New York; and a continuation of the railroads already made, so as to give a direct and rapid inland communication from Boston to New Orleans—a grand railroad has also been proposed from the Hudson River to Lake Erie and the Mississippi.

1226. The progress of civilization is marked by the improvements in *buildings* and the erection of *towns and cities*



Houses of Australia.

Hottentots and their Villages.



Tartar Tents and Cattle.

Tent of an Arab.

House in Siam.

Palace of the Tuileries, Paris.

P. 241.

The *wandering tribes* of Tartars, and the Bedouins of the Arabian and African deserts, live in tents covered with felt, cloth, or skins. A village is merely the encampment of a horde, or tribe, and is moved from place to place as convenience requires.

1227. *Savage nations* usually live in huts, constructed of different materials, and with various degrees of skill, according to the situation and character of the people. They are generally formed of stakes or poles, interwoven with twigs and covered with bark or leaves, or sometimes plastered with clay. The fire is made in the centre, and the smoke escapes at the top. Those of the North American Indians are called wigwams. Their villages consist of an irregular collection of these huts or tents.

The natives of *South Africa* form their huts of bent poles, plastered with earth, much resembling a bee-hive. They are arranged in a circle around an enclosure which contains their cattle; and the village is termed a kraal. A number of villages formed around the missionary stations of South Africa, and Sierra Leone, have a neat appearance, and present many of the improvements of civilized life.

1228. The Laplanders, Northern Siberians, and the North American tribes of the *Frozen Regions*, usually reside in tents, or huts constructed of light materials, during the summer. But the winter huts are built with thick walls of stone and turf, with no outlet for the smoke except the entrance. In Greenland and Lapland, they are protected from the cold winds by a long, vaulted passage for entrance; and to render them still warmer, many of the tribes of these regions build them half under ground, and enter through an opening at the top, by means of a ladder.

The Esquimaux of North Georgia make their winter huts of snow, which is so compact that it may be cut into blocks, and used like stone. A dwelling of this kind is beautifully transparent; and when lined with skins and branches of trees, it is said to form a comfortable winter residence in these dreary regions. (*Parry.*)

1229. *In the Torrid Zone*, many of the uncivilized nations build their huts of very slight materials. They are often mere sheds, used only as a protection from the rains and dews. In Polynesia, and some of the Asiatic islands, they are very neatly built of canes, are lined with mats, and covered with leaves. The same style of building is found in Hindoostan and Farther India, and to a considerable extent in China; and these, or mud-walled huts, are the best buildings of the poor.

The residence of a King in Africa, appears like a collection of thatched barns and hovels, surrounded by a mud-wall; and the palace even of the Emperor of China, is only a collection of cottages, in which the meanness of the structures is concealed by splendid curtains and gilded ornaments. The dwellings of the great are distinguished by the number of buildings, and the great extent of ground they occupy, rather than the superiority of architecture.

1230. The huts and tents of uncivilized nations, have rarely more than a single *room and fire*.

In the Frozen Regions, several families are usually crowded together, each occupying a stall divided off by posts or skins. They are lighted by a large lamp, composed of moss and supplied with oil, which also serves as a fire. The domestic animals often partake of the comfort and filthiness of these habitations.

The hovels of the poor in the Half-Civilized nations of Asia, and even in *Russia*, *Poland*, and many parts of *Austria*, *Germany*, and *Ireland*, are little superior to those of Savage nations, in structure or in cleanliness; and are inferior to those of many nations in Polynesia. In Ireland, "the peasantry are miserably lodged, in a hovel of four mud walls, with one entrance, frequently without either a window or a chimney," and are scarcely sheltered from the rain. The floor is of clay; their beds are usually bundles of heath or straw spread over it, and many share these wretched accommodations with their cow or pigs.

1231. The arts and refinement of *civilized nations* lead to the erection of more substantial and convenient *dwellings;* which furnish a complete protection from the weather, and are found with every degree of comfort and elegance, from the plain cottage of the farmer to the splendid palace of the noble. The regard for religion—the necessary arrangements of an organized government—and the pride of royalty, give rise to the erection of numerous and magnificent *public build-*

ings; and among Civilized nations, it has become a distinct art, to devise such forms and ornaments as are best adapted for beauty and convenience. A description of the various works of architecture would require a volume; and we can only consider the buildings of cultivated nations, as they are collected in cities and towns.

1232. *The cities of* EUROPE far surpass those of America, in number, population, and magnificence. They are superior to any in the world, in their universities, hospitals, museums, and other public institutions, in the splendor and size of their churches and public buildings, and in the extent of their manufactures and commerce.

In the cities on the Continent the streets are usually narrow, crooked, and filthy. They are seldom furnished with side walks, and foot passengers are exposed to constant danger in the crowd of carriages. Most of the cities are surrounded with walls, and entered only by gates, and are much more crowded with houses and inhabitants, than those of the United States. In the most populous countries, villages like those of America are rarely seen; but every collection of houses appears like a portion of a large city.

1233. *The houses* are generally of stone or brick; but in many of the towns of Denmark, Norway, Sweden, and Russia, they are built of timber. They are usually high, often from five to ten stories in the large cities. They are not uniform in their appearance; and magnificent palaces are frequently surrounded by wretched huts.

In the cities of Catholic countries, especially in the south of Europe, pictures or images of saints are placed at the corners of the streets, and passengers frequently stop to offer their devotions before them. These cities are also distinguished for the great number of their churches and chapels, and for the costly paintings, statues, and ornaments they contain. *Most cities of Southern Europe* are furnished with water by aqueducts; and fountains are erected in the streets and public squares, which add to their beauty, and produce a refreshing coolness in summer.

The engravings will give a more distinct idea of the general appearance of the principal cities, than any description.

1234. Most of the large cities are seaports, or connected with the sea. *The capitals are usually distinguished* as the residence of the sovereign and royal family. London, Paris, Petersburgh, Moscow, Vienna, Berlin, Amsterdam, Dublin, Rome, Florence, and Dresden, are situated on rivers, which divide them into two portions connected by bridges. Rome, Madrid, Lisbon, and Edinburgh, are built on several hills, which gives them a picturesque appearance.

Naples, and most of the other *cities lying on the Mediterranean*, are situated on declivities, and the streets rise from the shore, like the seats of an amphitheatre. The seaports of Western Asia, and Barbary, are generally situated in the same manner, and the houses are frequently white. The view of Algiers, will give some idea of their appearance.

1235. ASIA abounds with large cities, but much inferior in their appearance to those of Europe. The buildings are generally mean, and crowded with inhabitants. The streets are extremely narrow, irregular, and filthy, and seldom paved.

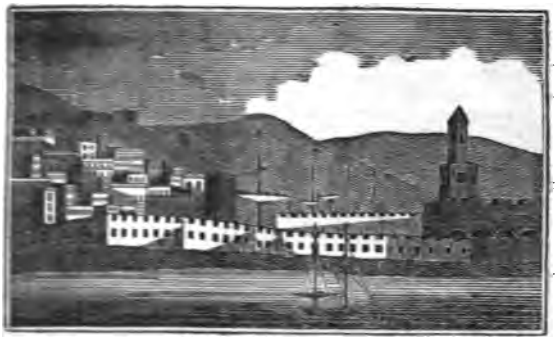
In *Western Asia*, the houses of the rich are usually of stone, or of brick, which are sometimes only sun dried. They are generally built around a court or space in the centre, from which they receive most of their light and air, and which is frequently adorned with gardens and fountains. They are often magnificent within; but they have few or no windows towards the street. They present to the traveller only a dismal succession of high walls, with here and there a lattice, producing the appearance of a range of prisons. The roofs are usually flat, so that the inhabitants can pass from one house to another without descending into the street, and frequently sleep on the house-top, in the hot season. The houses of the poor are low and mean, built of mud, or a mixture of small stones and mortar.

This mode of building, like other customs and arts of Western Asia, was early imitated in *Northern Africa and Southern Europe*, and it is still pursued, except that in Europe the houses are more open. The floors are usually of brick or mortar; chimneys are rare; and their place is supplied by pans of coal in

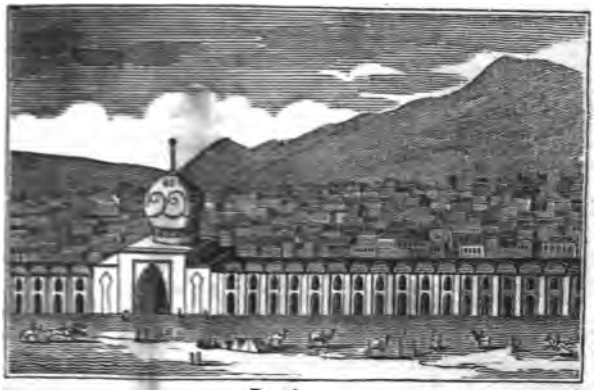
London.

Edinburgh.

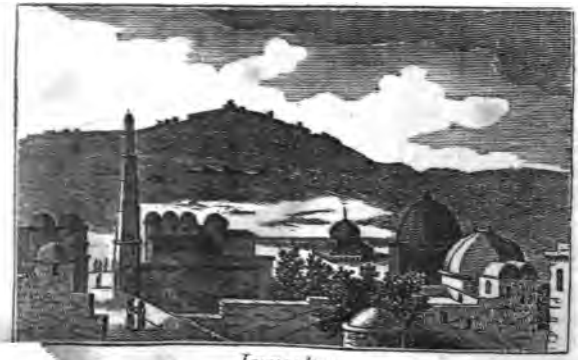
Venice.



Algiers.



Ispahan.



Jerusalem.

winter. It is common in countries on the Mediterranean, to use the lower story of the house as a stable.

Instead of churches, the *Mahometan cities* are adorned with mosques, which are often very splendid. At the side of each mosque are minarets, or lofty circular towers, with a gallery near the top, from which a crier calls the people at the hours of prayer.

The cities of Turkey, as well as those of Africa on the Mediterranean, are frequently visited by the plague, which destroys vast numbers of the inhabitants.

1236. *The cities of Eastern Asia*, (except a few in Hindoostan) are poorly built, and are much inferior to those of Western Asia. They are generally collections of low, thatched huts, of mud or bamboo; and are formed of such slight materials, that they are frequently destroyed by fire, but are easily rebuilt. The temples and pagodas are generally the only buildings which have any beauty; and these are often splendidly adorned with gold and gilding, especially in China and Burmah.

Most of the cities of Asia are surrounded by walls, usually of mud or sun, dried bricks. Many of them are partially in ruins, or encircled by the ruins of ancient cities.

The view of Ispahan will give some idea of the appearance of this celebrated city, as it was seen by Morier.

China abounds in cities, generally built like those of India, but most of them walled. The pagodas, towering above the surrounding buildings, are striking features in their external appearance; as will be seen in the view of Pekin.

1237. A large part of AFRICA is in a state of barbarism, and therefore contains few cities, or even considerable towns, in comparison with Europe and Asia. *These are chiefly in Northern Africa*, and most of them are greatly inferior to the chief cities of Europe and Asia in commerce, manufactures, and wealth, as well as in population. They are inferior to the poorest in Europe in their appearance, on account of the narrowness, irregularity, and filthiness of their streets. Even in Cairo and Fez, the streets are often so narrow, that two camels cannot go abreast.

The houses, like those of the Asiatic cities on the Mediterranean, commonly have flat roofs, with an open court in the centre, and are destitute of windows towards the street. They are generally built of half-burnt brick, or of a mixture of stones, earth, and mortar, whitened with lime. In Cairo, many are of stone, and some of the mosques and other public buildings in this city and Barbary, are built of stone or marble. Like other Mahometan cities, they have numerous mosques, and these with the palaces of the sovereigns or governors, are usually the only handsome buildings. Many cities of Egypt are surrounded by grand and interesting remains of ancient buildings and monuments.

Most of the cities on the coast of Barbary are fortified, and are places of some trade. They have more resemblance to those of Europe, than any others in Africa.

1238. AMERICA is much less distinguished for the number and size of its cities, than Europe and Asia. There are none which belong to the four first classes of cities in the world, and only five which are above the seventh class. *The cities of British America, and of the Spanish and Portuguese colonies*, resemble those of Europe. Quebec and Montreal have the appearance of old French towns. The cities of Mexico and South America, have more resemblance to those of Southern Europe.

1239. In SPANISH AMERICA, the cities are generally built on a regular plan, with broad, paved streets, furnished with sidewalks. Most of them are supplied with water by aqueducts, and the public squares are often adorned with fountains, as in Spain.

The public buildings, especially churches, nunneries, and convents, are numerous and splendid. The *private houses* are seldom convenient or elegant. They are usually low, often only one story, and seldom exceeding two stories in height, on account of the earthquakes and hurricanes to which these cities are subject. Lima, Quito, and Carraccas, have been almost destroyed by earthquakes. In Lima, the houses are built of wood; in Popayan and Quito, of unburnt brick; and in most of the other cities, of brick or stone. In the cities of the Torrid Zone, the windows are usually furnished with lattices, blinds or curtains, instead of gla- account of the heat

A number of these *cities are situated on such high ground*, that they enjoy perpetual spring. Santa Fe de Bogota, Quito, and Popayan, are nearly two miles above the level of the sea; Mexico, Puebla, Durango, and several others, a mile and a half; and Carraccas more than half a mile.

PORTUGUESE AMERICA or BRAZIL, is extremely deficient in cities and towns. A few only are found on the coast, at considerable distances, and without any roads from one to another. The only towns in the interior, are those established for mining. The cities generally resemble those of Spanish America; but are not so pleasant or so well built.

1240. In *the cities of the* UNITED STATES, the houses are generally built of brick. The streets are broader and more neat than in most European cities; and are usually paved, and furnished with side-walks for foot passengers. They are adorned with churches and other public buildings, which often have considerable beauty. Perhaps no cities in the world are more distinguished for the number of humane and charitable institutions.

The towns of the Northern United States, especially of New England, are seldom closely built. The houses are generally of wood, separated by gardens and cultivated grounds; and the streets are usually shaded with trees. These circumstances give them peculiar beauty.

The towns of the Western States, and of the western parts of New-York and Pennsylvania, are laid out more regularly, and the buildings are generally more elegant, than in the older towns of the Atlantic States.

In the Southern States, the people are so much scattered, that there are few towns or villages, and only a smaller number of places of considerable size.

Most of the principal cities of the United States *are seaports*, and the largest are situated on islands or peninsulas. New-York and New-Orleans are on islands; Boston, Philadelphia, and Charleston, are on peninsulas; Hartford, Albany, Trenton, Richmond, and Savannah, are seats of government, all except Albany at the head of sloop navigation, on their respective rivers.

The seats of government of the individual states are often very small towns, chosen only on account of their central situation.

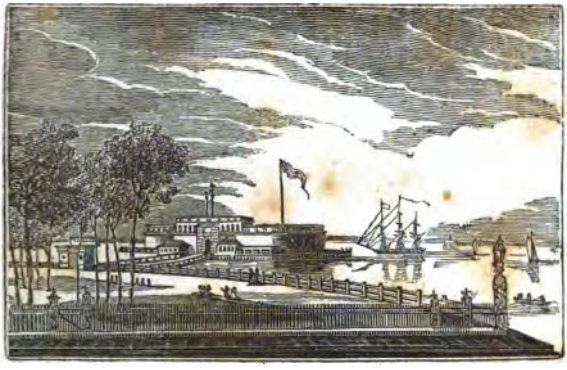
1241. *The Indian Towns* of Mexico are many of them well built, and brick has long been in use among the natives of that country. The ancient cities of the natives in Peru and Chili, are generally of brick or stone. Some are adorned with fine buildings, and have an appearance of magnificence.

ARTS AND MANUFACTURES.

1242. *The state of arts and manufactures* in different nations, is an important index of their state of civilization.

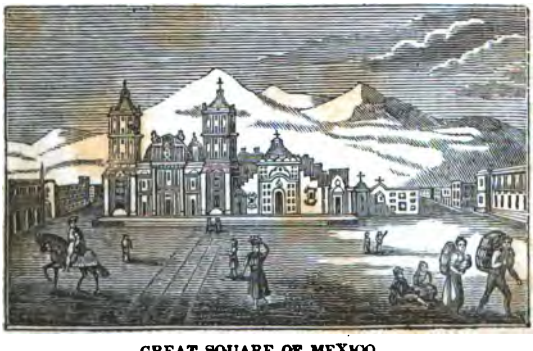
Among savage nations, all arts are in a low state, and this is generally the fact in *Barbarous nations*. There is no distinction of trades, but each man builds his own hut and canoe, and makes for himself all the instruments and clothes which he uses. With such a variety of employments, he cannot become perfect in any one.

The same practice continues in some *civilized countries which are thinly settled*, and where the attention of the people is, from necessity, chiefly devoted to agriculture, and the products of mines and forests. Thus in Norway and Russia, the peasants generally make all the necessaries for their own families. In such cases, the implements of workmanship are imperfect, the labor is slow and difficult, and nothing is made in the best manner. The manufactures of such nations are not usually sufficient for home



CASTLE GARDEN, AND BATTERY, NEW-YORK.

PENNSYLVANIA CAPITOL, HARRISBURG.



GREAT SQUARE OF MEXICO.

P. 214.

WESTMINSTER ABBEY, LONDON.

PALAIS ROYAL, PARIS.

BERLIN.

consumption; and the inhabitants find agriculture more profitable; as in the North of Europe and in America.

1243. *Among the Half-Civilized Nations of Asia*, and some of the *Barbarous tribes of Asia and Africa*, beautiful articles of manufacture are produced. Such are the silks and cottons of India and China—the shawls of Cashmere—the carpets of Persia and Cabul—and the embroidery, and other works of silver and gold, in India and the Asiatic Isles. But they are generally made with a few simple and rude instruments, and with very great labor. In India, Arabia, and Africa, the weaver fixes his threads to the ground by small stakes, in the open air, and removes his singular loom at night. Yet India produces cotton fabrics superior to almost any in the world. In Japan and China, the instruments are more perfect.

1244. In some Half-Civilized countries, but especially in Civilized countries which are populous, the arts are greatly advanced by *the division of labor*. Each man is devoted to a single employment. He thus learns the best methods of pursuing it; and is able to work with more skill and rapidity.

This is carried so far at the present day, that in England, 25 persons are employed in making a pin. One cuts the wire, another smooths it, another points it, &c. and these persons will make more in a day, than several hundreds who should pursue their labors singly.

1245. It is only in the *Civilized countries of Europe and America*, that the tools and instruments of various trades are found in a perfect state. Here also vast improvements have been made by the use of machinery, moved by water, steam, or the force of animals; which performs the labor of men with perfect accuracy and uniformity, and a despatch almost incredible.

From the greater degree of skill thus obtained in populous countries, and from the excess of inhabitants, a part of them may be more profitably employed in manufactures than in agriculture. We accordingly find that such countries as Great Britain, Germany, and France, not only supply themselves with manufactures, but export large quantities to other nations.

A single machine with the aid of one or two persons to attend it, will perform the labor of 100 men, in a more perfect manner than could have been effected by human efforts. In contemplating the vast manufacturing establishments of Europe and the United States, it would seem as if blocks of wood, and bars of metal, were endowed with activity and intelligence.

1246. The tools and instruments used in tilling the ground, in building our houses, and other important arts, and the utensils employed to prepare our food, are chiefly made of metal. Hence *the working of metals* is the foundation of all arts; and forms the most important employment of civilized man.

Among *Savage nations*, this art is unknown, except to a few who have learned it from Europeans. Among *Barbarous nations*,

it continues very imperfect. The same mechanics work in iron, copper, and gold, and the operation is carried on in the open air. The apparatus, which is moved from place to place as they travel, consists usually of a bag for blowing the fire, an anvil and a hammer; and all the implements are very rude. But as has been already observed, they succeed by patient labor, in forming some articles of great beauty.

1247. *The manufacture of metals from their ores*, into bars, pigs, &c. is carried on to a great extent in every Civilized country which contains mines. In those which are thinly settled, as Russia, Siberia, Sweden, and Norway, the metals are generally exported in their unwrought state, and only the most common and necessary tools, and implements of husbandry, are manufactured.

In the *United States*, all these implements, and all articles of cast iron are well manufactured, in sufficient quantities for home consumption; but they are still principally dependent on foreign nations for all fine articles, and for most of the wrought iron and steel which is used. *The gold and silver of South America and Mexico*, are chiefly exported either in bars, or bullion, or in coin.

1248. *In the populous countries of Europe*, the metals are wrought into every form that ingenuity can devise, for use or ornament, and are exported to other parts of the world.

England surpasses every other nation in the extent, variety, and excellence of its manufactures of metals. *Sheffield* is unrivalled in its cutlery; and *Birmingham* has been called the toy shop of Europe. *London and Liverpool* produce the best clocks and watches in use. London is also unrivalled in the construction of mathematical, astronomical, and philosophical instruments. The metallic manufactures of England and Wales employ 320,000 persons; and produce 17,000,000*l.* annually.

1249. *Germany* ranks next to England in metallic manufactures. In Prussia many articles are made with peculiar ingenuity and skill. *Clocks and watches* are made in great numbers for exportation in Switzerland, France, and Germany; but they are generally inferior to the English in quality. *Jewelry* is manufactured to a great extent in France, Switzerland, and the Netherlands; and France is distinguished for the more elegant metallic articles. Holland and Germany are remarkable for *toys*.

1250. Turkey, and especially Damascus, has long been celebrated for unrivalled skill in *the manufacture of sword blades, and other cutting instruments*. This art has extended to Persia, and some of the neighboring countries. The Japanese surpass the Chinese and Hindoos, in working metals; and are said to make instruments of steel, little inferior to those of Turkey

1251. *The manufacture of plate, and other articles of gold and silver*, is probably more perfect in England and France, than in any other part of Europe. The vessels and ornaments of these metals made in Mexico, rival the finest productions of European skill. In Japan, China, India, and the Asiatic Isles, the most exquisite workmanship in silver and gold, is produced with very imperfect tools.

1252. Most Savage and Barbarous nations are ignorant of *the art of weaving*. They generally form their clothing of the skins of animals. The Tartars, and some other Barbarous nations, make a kind of felt, (like that of which our hats are composed,) from the wool of sheep, or the hair of camels. In many of the Islands of Polynesia, the natives use mats for their covering, or form a species of cloth from the bark of trees. A few of the Barbarous nations of Asia and Africa, are acquainted with weaving.

This art is carried to the highest perfection among Civilized and Half-Civilized nations; and hemp, flax, cotton, wool, and silk are manufactured into various species of cloth, adapted to every use, of comfort and ornament. In warm climates, silks and cottons are the chief articles, and in cold climates, woollen, cotton and linen.

1253. *Some of the finest woollen cloths* are made in France and England, especially in the west of England and Yorkshire. The woollen manufactures of England employ 500,000 persons, and amount to 180,000,000*l.* sterling annually. In Saxony, the Netherlands, and Prussia, the manufacture of cloths is also in a perfect state and very extensive. Silesia, in Prussia, is especially distinguished; and produces some of the finest clotns made on the continent. *In Spain, and most of the remaining countries of Europe*, this manufacture is in an imperfect state. Coarse cloths are made in considerable quantities, in the north of Europe; but not generally enough for home consumption.

In some parts of *the United States* woollen cloths are manufactured in a high degree of perfection, and flannels and the cloths in common use, are made in sufficient quantities for home consumption.

1254. *Carpets* are manufactured to a considerable extent, and of a good quality, in England and Scotland; but the most beautiful are made in Turkey, Persia, and the north of Hindoostan. In Turkey this is almost the only article manufactured in sufficient quantities for exportation. They are woven by the Iliats, or wandering tribes who inhabit the mountains. The Persians excel the Turks, and even the Europeans, in the brilliancy of their dyes.

Independent Tartary, and the neighboring regions, furnish

stuffs made from camel's hair. The *Cashmere shawls* are woven in Cabul and Cashmere, from the hair of the goat of Tibet They surpass all European fabrics in beauty and fineness.

1255. *Cotton cloths* form the principal clothing of the inhabitants of warm countries, and are manufactured in most countries of the Torrid Zone on the eastern continent. The finest and cheapest cottons have usually been procured in Hindoostan; and they have been for ages, the staple article of manufacture and export in that country. The improvements in machinery, now enable Europeans and Americans to excel the Asiatics in most branches of this manufacture; and cotton goods are sent even to Calcutta, from England and the United States.

The cotton manufacture of Great Britain is not rivalled in the magnitude and perfection of its operations, in any other part of the globe. It employs 427,000 persons in England and Wales, and produces 15,000,00*l.* sterling annually. Some of the *finest muslins*, next to those of India, are obtained from England, Scotland, France, Saxony, and Austria. In *Austria* the manufactures of cotton employ 360,000 persons. Cottons are made in *Switzerland* to some extent for exportation, and in Germany and most *other countries of Europe*, for home consumption. The Nankin, or Nankeen cotton cloth, obtained chiefly from China, is made from a colored species of cotton, not unknown in the Southern United States.

1256. *The manufacture of cotton* has become extensive *in the United States.* It has long been woven for domestic consumption in the *Southern States.* In the *Eastern and Middle States*, numerous and extensive factories have been erected, with many valuable improvements on the English machinery. They furnish most of the coarse cottons, shirtings and calicoes used in the United States; and considerable quantities are exported to South America, and even to Europe and the East Indies. Massachusetts, Rhode Island, Connecticut, New-York, and Pennsylvania, are most engaged in this manufacture.

1257. *Linens* are manufactured for exportation to the greatest extent, and of the finest quality, in Ireland, Bohemia, Moravia, Prussian and Austrian Silesia, and the Netherlands, particularly in Holland. Bohemia alone, employs more than 300,000 persons in the linen manufacture. In Silesia, whole villages and towns are occupied by weavers.

Russia has 300 factories of linen; and this forms the most important manufacture and export of the *Hessian states*, in Germany. *In other parts of Europe, and in the United States*, it has been carried on only to a limited extent, and chiefly for home consumption. The manufacture of *hemp into duck, sail cloth and cordage*, is most extensive in Russia and England.

The finest laces are those of France and the Netherlands; but laces are also made in Great Britain, Denmark, Russia, and Switzerland.

1258. *The manufacture of silk* is carried on to a great extent in China and the East Indies, Spain, Italy, and the southern parts of France, Austria, and Russia. It is the most extensive and important manufacture in *Spain, and the south of France.* In the city of Lyons alone, it employs 60,000 persons. It is also carried on to some extent in Switzerland, Germany, the Netherlands, and England, and also in Turkey, Persia, and Northern Africa.

Embroidery, brocade, and tapestry of silk, cotton, and wool with gold, are made of peculiar beauty in the western and southern countries of Asia. The tapestry of the Gobelins, in Paris, surpasses every other production of this kind.

1259. Most Barbarous nations manufacture *pottery*, in some rude way; and the coarser species of earthen ware are made for domestic use, in almost all countries.

Porcelain, or China ware, was formerly procured only in China, or of an inferior quality in Japan. It is now manufactured at Berlin and Dresden in Prussia, Sevres in France, and in England, superior in beauty to that obtained from China. It is also made in Copenhagen, Vienna, and some other parts of Europe. Other species of *earthen ware, of a fine quality*, are most extensively manufactured in England, France, Germany, Denmark, and the Netherlands. Only the coarser kinds are made to any extent *in the United States;* and the fine earthen ware is chiefly obtained from England and Germany.

1260. *Glass* is made to a greater or less extent, in most Civilized and Half-Civilized countries. France, Austria, Germany, Italy, and England, excel in this manufacture, and produce the finest mirrors and cut glass. The manufacture of crown glass, (for windows,) and cut glass, has been carried to a high degree of perfection *in the United States;* and that of Boston and Pittsburg is scarcely surpassed in Europe.

COMMERCE.

1261. From the variety of productions of different parts of the globe, every country furnishes more of some articles than is necessary for the supply of its inhabitants, and is usually deficient in others. This gives rise to an exchange by *commerce*, the nature and extent of which is regulated by the products and wants of a country.

1262. Some articles are so rare, that they can be procured in commerce only from a few countries. The *precious stones* are chiefly obtained from Siberia, India, and South America; the *diamond* from Brazil and Hindoostan; *pearls* chiefly from India; the *red coral* from the Mediterranean; and the *precious metals* from Mexico and South America. (*See* MINERALS, ¶ 826, 828, 837, 838.)

Europe and North America are supplied with *tea*, exclusively from China, and with *the finest spices*, from the East Indies; and South America is furnished with *matte* (as a substitute for tea) by Paraguay alone. The coast of Arabia and Africa near the mouth of the Red Sea, furnish nearly all the *fragrant gums* used by other nations, such as myrrh, frankincense, &c.

1263. Other numerous and delicious *productions of the Torrid Zone and the Warm Regions*, give rise to a perpetual commerce with the Temperate and Cold Regions, in coffee, sugar, fruits, &c. (*See* VEGETABLES, ¶ 775, 783-4, 788-9.)

The more common spices, pepper, ginger, &c. and also *sugar*, are produced for exportation chiefly in the West and East Indies, and some parts of Africa and South America. Louisiana exports considerable quantities of sugar. *Coffee* is chiefly obtained from the West Indies, Arabia, and the Asiatic Islands. *Cacao*, or the chocolate-nut, is almost exclusively from South America; and this country and Mexico furnish most of the *indigo and dye-woods* of commerce. *Rice and cotton* are generally obtained from the Southern United States, the East Indies, and Egypt.

The largest quantities of *tobacco* are procured in commerce from Virginia, Maryland, Kentucky, and Tennessee. Still it is raised in many other states and countries in small quantities, and is exported to some extent, from South America.

1264. The countries on the Mediterranean, including the South of France, Spain, Portugal, Italy, Turkey, and Barbary, and the African Islands, furnish most of the *oranges, lemons, dried fruits, wine, and olive oil*, consumed by Civilized nations; but the United States receive a considerable quantity of oranges and lemons from the West Indies. The *wines* of Madeira are considered superior to any other; some from the Cape of Good Hope have peculiar delicacy; and some of the wines of France and Germany are highly esteemed. A fine wine is also brought from Marsala, in Sicily, which is thought to rival the Madeira, and is called Sicily-Madeira.

1265. *Continual intercourse* also *arises* between manufacturing countries, and those which are covered with forests, enriched with mines, or engaged in grazing and tillage.

Countries covered with forests, supply those which are cultivated, with timber, and the various kinds of lumber; with tar and turpentine from the sap of the trees; and potash from the ashes. Norway, Sweden, and Russia, Vermont, New-Hampshire, Maine, and other forested portions of the United States, exchange these articles for the productions and manufactures of regions more cultivated. *When such countries have mines*, large quantities of wood are consumed in reducing the metals, which become articles of export, and furnish a source of wealth. This is the case in Sweden, Norway, and many parts of Siberia, Russia, Mexico, South America, and some districts of the United States.

1266. Some *countries* are well *adapted for grazing*, while from the coldness of their climate, the ruggedness of their surface, or their thin population, they are not extensively cultivated. These usually supply agricultural and manufacturing states with cattle and horses, or with their flesh and hides. Brazil and Buenos Ayres rear large herds of cattle, whose flesh, tallow, and hides are important articles of export. Russia supplies other nations with large quantities of tallow, hides, and leather. Norway and Denmark export cattle in considerable numbers. Beef, pork, butter and cheese, form important exports from Ireland, and also from the New-England states, and the states on the Ohio River.

1267. In exchange for the commodities of more favored nations, the *cold countries* of northern climates send their stores of fish, and the furs of their animals. In Denmark, Sweden, Norway, Netherlands, Scotland, and New-England, the fish and oil obtained by their fisheries, are important articles of export to the southern countries of Europe, and Asia Minor. *Codfish* are chiefly caught on the north-eastern coast of North America; especially on the Grand Bank of Newfoundland. The North Sea and Northern Ocean, on the coast of Europe, are visited at certain seasons by immense numbers of *herring*, which furnish supplies for the people of the neighboring countries, and give employment to a large number of fishermen. *Spermaceti, whale-oil, and whale-bone* are obtained from Greenland, and from the whale fishery.

Furs are chiefly obtained from the Savage and Barbarous nations, who inhabit the northern parts of Europe, Asia, and America. They are carried to most nations in the Temperate Zone. The finest are from Siberia. The sable and the ermine are valued at the highest price, and used as ornaments of dress, by the princes and nobles of Europe and Asia.

1268. *Temperate countries, adapted to tillage*, carry on a per-

petual intercourse with other nations, in grain, hemp, and flax The southern shores of the Baltic supply the north of Europe. Egypt, Barbary, and the countries on the Black Sea, send large quantities of grain to the south of Europe. *The United States* furnish the West Indies, Spain, and Portugal with considerable quantities in return for their peculiar productions. The variety of climate and soil in the different districts of the United States, enables them not only to supply each other with the various products of warm and cold climates, and of grazing and tillage, but to export tobacco, cotton, rice and provisions to other countries.

1269. *Thickly settled, and manufacturing nations*, obtain raw materials, and articles of necessity and luxury, from other nations, in exchange for the products of mechanical industry. The manufactures of India and China are sent to most Civilized countries. But Great Britain, Holland, Belgium, Germany, France, and Switzerland, may almost be styled, *the manufacturers of the world*. Few other nations supply their own wants; while these tax every quarter of the globe, even the savage tribes of Asia, Africa, and America, to reward their skill and industry.

From the account already given of manufactures, it will be seen that Great Britain furnishes *the largest supply of woollen and cotton goods. Silks are obtained chiefly* from India, China, France, Spain, and Italy; and *linen* from Ireland, Prussia, and Russia. England also exports a considerable amount of silk. *Metallic articles* are procured principally from Great Britain, Germany, and France.

1270. The variety of products in the different portions of a single country gives rise to *internal commerce*, often of great extent.

The vast territory and variety of climate and soil in *China*, render the productions of its various parts adequate to the wants of the people, and lead to an important internal commerce. The *Russian Empire* has a similar trade between different parts of its extensive possessions. It returns manufactured goods and provisions from Europe, for the furs and minerals of its territories in Asia and America. *The middle regions of Europe* have a similar course of internal trade, to a more limited extent.

The United States also have internal commerce to a considerable amount. The Middle States supply the Northern and Southern with grain—and receive provisions, cotton, sugar, &c. from them. The different districts of *South America*—mining, agricultural and commercial—have a perpetual intercourse with one another, for the interchange of their respective commodities.

1271. Some *nations* are merely *passive in foreign commerce;* trading only with those who come to procure their commodities, and receiving such articles as are brought, adapted to their wants

Such is *the trade of savage nations*, whose ignorance of navigation and arts prevents their going to a distance from home. From these, especially from the inhabitants of Northern Asia and America, the most valuable furs and other articles are obtained in exchange for beads, toys, or metallic articles, tools, and other goods, of far less value among civilized nations. Here the trade is merely the exchange of one commodity for another, and money is seldom used. Where a standard of value is employed, it often consists of shells or beads. In some parts of Africa, even lumps of salt are used as money.

1272. *Half-Civilized nations* are too ignorant of ship-building and navigation to extend their naval commerce far; and are chiefly confined to narrow seas, and short distances in their excursions. The *Turks* rarely go out of the Mediterranean; but the more enterprising *Greeks* often extend their voyages to the Atlantic. The *Chinese* confine themselves to the eastern coasts of Asia and the Asiatic Islands. *The Commerce of China and Japan* is chiefly of the passive kind; and they receive few commodities of other nations, except gold and silver. Of late, however, the manufactured goods of England have been extensively exported to China. These nations impose severe restrictions upon trade, and allow foreigners to come but to a single port. The Dutch are the only nation allowed to trade in Japan. The Chinese permit the Russians on their borders, to trade only at the town of Kiachta.

1273. Some nations have an *active commerce*, and are continually engaged in carrying their goods to others. All the maritime nations of Europe have trade of this kind. Others go still farther, and act as the carriers from one nation to another. In this way commerce is made not only advantageous by the exchange of commodities, but a profitable employment in itself.

The principal nations engaged in the carrying trade are the United States, Great Britain, Denmark, Holland and France. In Great Britain, $\frac{1}{8}$ of the exports are articles obtained from foreign countries; and in the United States, $\frac{1}{3}$. These nations extend their commerce to every part of the world, and obtain its productions and manufactures usually in exchange for their own.

The following table of the imports and exports of the United States, will serve as a specimen of the commerce of a nation engaged chiefly in agriculture and navigation, and will illustrate the principles which have been stated, concerning the articles furnished by each class of countries.

For the sake of distinctness, manufactured goods are marked (*m*); and the products of warm climates, (*). —One column of figures shows the articles imported for re-exportation, and the amount of our carrying trade.

TABLE OF THE PRINCIPAL IMPORTS INTO THE UNITED STATES, FOR 1829 AND 1833.

Imports.	*Value*, 1829.	*Value*, 1833.	*From what Countries Imported, in* 1829.	*Re-exported.*
Total imports,	$75,000,000	108,118,311		$17,000,000
m. Woollen Goods	6,900,000	13,303,909	England $\frac{5}{6}$—France $\frac{1}{12}$	200,000
m. Cotton do.	8,600,000	7,819,130	Great Britain $\frac{5}{7}$—France $\frac{1}{17}$—China $\frac{1}{17}$	1,600,000
m. Silk do.	7,000,000	9,174,199	France and dominions $\frac{5}{7}$—China $\frac{1}{4}$—British East Indies $\frac{1}{24}$	900,000
* Coffee	4,600,000	10,567,299	Cuba $\frac{1}{2}$—Hayti $\frac{2}{7}$—Brazil $\frac{1}{4}$—Colombia $\frac{1}{16}$—E. and W. Indies	1,500,000
m. Iron and Steel	5,800,000	7,778,147	England $\frac{2}{3}$—Sweden $\frac{1}{5}$—Russia $\frac{1}{7}$	200,000
* Sugar	3,600,000	4,755,856	Cuba $\frac{1}{8}$—Danish W. Indies $\frac{2}{9}$—Brazil $\frac{1}{10}$—E. Indies	800,000
m. Linen Goods	2,800,000	3,132,557	Great Britain $\frac{3}{5}$—Germany $\frac{2}{9}$—France $\frac{1}{10}$—Russia $\frac{1}{32}$	700,000
Gold & Sil'r C'n & Bullion	7,400,000	7,070,368	Mexico $\frac{4}{7}$—Peru $\frac{1}{12}$—S. America, generally $\frac{1}{10}$—W. Indies $\frac{1}{2}$	4,300,000
Spirits	1,400,000	1,537,226	France $\frac{3}{7}$—Netherlands $\frac{1}{5}$—W. Indies, remainder.	500,000
* Molasses	1,500,000	2,867,986	Cuba $\frac{1}{2}$—Other W. Indies.	8,000
Raw Hides	2,300,000	3,588,819	Brazil $\frac{1}{3}$—Buenos Ayres $\frac{1}{5}$—S. America, generally $\frac{1}{7}$—W. Indies.	400,000
* Wines	1,600,000	2,269,497	Madeira $\frac{1}{4}$—Spain $\frac{1}{7}$—France $\frac{2}{7}$—Portugal $\frac{1}{12}$—Italy and Malta $\frac{1}{15}$	200,000
* Teas	2,100,000	1,484,603	China.	500,000
* Indigo	1,400,000	986,402	British E. Indies $\frac{2}{5}$—Colombia $\frac{2}{7}$—W. Indies $\frac{1}{9}$—S. America	700,000
m. Hempen Cloths	1,200,000	1,875,354	Russia $\frac{1}{2}$—G. Britain $\frac{5}{12}$—Germany $\frac{1}{16}$	400,000
m. Copper, Brass, and Tin	1,600,000	2,106,994	England $\frac{3}{5}$—S. America (unwrought) $\frac{1}{4}$—W. Indies $\frac{1}{30}$	200,000
m. Earthen & stone Ware	1,200,000	1,669,336	England	47,000
Hemp	650,000	470,973	Russia $\frac{4}{5}$—England $\frac{1}{10}$—Italy, Malta, Trieste, &c. $\frac{1}{10}$	2,000
m. Hats, Caps and Bonnets	540,000	189,846	Italy and Malta $\frac{9}{10}$—France $\frac{1}{34}$	10,000
Salt	710,000	996,418	England and Ireland $\frac{2}{3}$—Brit. W. Indies $\frac{1}{7}$—Portugal $\frac{1}{9}$—Spain.	11,000
* Spices	460,000	919,493	West Indies $\frac{1}{2}$—Asia generally $\frac{1}{3}$—England, Netherlands, &c.	240,000
m. Glass, (ware & window)	430,000	550,623	Great Britain $\frac{2}{5}$—Germany $\frac{1}{2}$—France $\frac{1}{6}$	65,000
Wool	240,000	240,892	England $\frac{1}{2}$—Turkey and Egypt $\frac{1}{4}$—Spain $\frac{1}{8}$—Germany $\frac{1}{16}$	35,000
* Fruits	350,000	805,304	Spain $\frac{4}{7}$—France $\frac{1}{7}$—Gibraltar $\frac{1}{8}$—Mediterranean ports $\frac{1}{7}$	35,000
Candles, Soap and Tallow	122,000	96,343	Russia $\frac{1}{5}$—France $\frac{1}{5}$—Mexico $\frac{1}{5}$—S. America $\frac{1}{5}$	102,000

* Dye Woods . . .	260,000	489,911	S. America $\frac{1}{3}$—Mexico $\frac{1}{4}$—Hayti $\frac{1}{5}$—W. Indies $\frac{1}{8}$—Guatemala.	305,000
Furs	335,000	233,329	England $\frac{3}{5}$—Brit. American Colonies $\frac{1}{4}$—France $\frac{1}{12}$	5,000
m. Paints	39,000	67,314	England $\frac{4}{5}$—Mediterranean ports $\frac{1}{5}$	53,000
Lead	52,000	89,079	Spain $\frac{2}{5}$—Danish W. Indies $\frac{1}{5}$—England $\frac{1}{5}$—Peru, Italy & Malta.	86,000
* Cocoa	256,000	201,452	Colombia $\frac{1}{3}$—W. Indies $\frac{1}{3}$—Guatemala & S. A. $\frac{1}{4}$—Gibraltar $\frac{1}{12}$	261,000
Cigars	311,000	484,456	Spanish W. Indies $\frac{31}{32}$—South America $\frac{1}{32}$	48,000
m. Gold, Silver, and Precious Stones, manufactured	416,000	724,920	England $\frac{3}{5}$—Germany $\frac{1}{4}$—France $\frac{1}{8}$	25,000
m. Cordage	194,000	153,081	Russia $\frac{1}{2}$ Great Britain and dominions $\frac{1}{3}$—France $\frac{1}{16}$ . . .	134,000
Coal	146,000	261,575	Great Britain $\frac{6}{7}$—British American Colonies $\frac{1}{7}$	2,000
Gypsum	65,000	205,698	Nova Scotia $\frac{19}{20}$—France $\frac{1}{20}$	
m. Beer, Ale, and Porter	71,000	94,325	Great Britain	10,000
m. Paper & Paper Hanging	166,000	137,354	France $\frac{1}{2}$—Italy and Malta $\frac{1}{3}$—Great Britain and Spain . .	68,000
Bristles	26,000	101,293	Russia $\frac{7}{8}$—Germany $\frac{1}{8}$	5,000
Sulphur	14,000	21,160	Italy and Malta $\frac{4}{7}$—France $\frac{1}{4}$—Mediterranean ports $\frac{1}{8}$ . .	4,000
m. China Ware . . .	98,000	148,851	France $\frac{1}{3}$—England $\frac{1}{3}$—China $\frac{1}{7}$	5,000
* Olive Oil . . .	20,000	36,000	Turkey and Egypt $\frac{2}{3}$—Italy and Malta $\frac{1}{3}$—Adriatic ports $\frac{1}{4}$.	15,000
* Cotton	55,000	46,850	South America $\frac{1}{2}$—W. Indies $\frac{1}{2}$	51,000
m. Gunpowder . . .	20,000	5,249	England	5,000
* Quicksilver . . .	211,000	31,205	Spain	212,000
* Opium	107,000	87,638	Turkey and Egypt $\frac{7}{8}$—France on the Mediterranean $\frac{1}{8}$—England.	117,000
m. Lace	803,000	1,226,059	England $\frac{3}{4}$—France $\frac{1}{5}$—Germany $\frac{1}{20}$	56,000
* Raw Silk	102,000	135,348	China.	36,000
Rags	198,000	411,785	Mediterranean ports $\frac{9}{10}$—Germany $\frac{1}{10}$	
* Wood (Mahogany &c.)	314,000	275,636	Hayti $\frac{2}{3}$—W. Indies generally $\frac{1}{12}$—South America $\frac{1}{12}$.	84,000
m. Wood, (manufactured)	121,000	206,478	France $\frac{1}{2}$—Germany $\frac{1}{4}$—England $\frac{1}{5}$	
m. Books	138,000	183,610	England $\frac{3}{8}$—France $\frac{1}{4}$—Germany $\frac{1}{14}$—Italy and Malta . .	9,000
* Cork	35,000	54,117	France $\frac{9}{10}$—Portugal and Gibraltar $\frac{1}{10}$	1,000

EXPORTS of Foreign articles, 19,800,000. Tropical products $\frac{1}{2}$—Gold and Silver 1-9—Manufactures $\frac{1}{2}$
do. of Domestic do. 70,000,000. Products of Agriculture 4-5—of Manufactures 1-10—of the Forest 1-15—of the Sea 1-30.

1274. *Circuitous voyages* are sometimes made, to procure the articles necessary for commerce. Thus many American and British ships procure furs from the North-west Coast, seal skins from the Southern Ocean, or sandal-wood from the Sandwich Islands; and then carry them to China in exchange for teas, silks, &c. The ships of the United States carried furs to Canton to the value of half a million of dollars, in the year 1803.

Some commercial nations employ great numbers of their ships in *fisheries* for the whale, cod, herring, and seal, to obtain articles of commerce. The whale and seal fisheries are most extensively carried on by the British and the Eastern United States. Massachusetts, and especially the Island of Nantucket, is most distinguished for this trade. The cod and herring fisheries employ great numbers of vessels, from the United States, Great Britain, the Netherlands, France, and the northern countries of Europe; and the produce is carried to southern climates.

1275. Extensive regions in the interior of Asia and Africa, carry on all their *commerce by land*. Caravans are continually crossing the deserts of Asia and Africa. They are composed sometimes of 1000 or 2000 merchants with their camels, who assemble and travel together for the sake of security. In this way, the spices of Arabia, the gold and ivory of Africa, and the manufactures of India and China, are scattered through the surrounding countries; and the interior receives the articles obtained from the coast, or from foreign countries. The trade in salt is an important branch in Africa. On the principal routes, caravans go and return at certain seasons of the year; and are often attended by guards.

1276. One branch of commerce has not been mentioned which disgraces a large number of civilized nations—the *slave-trade* to Africa.

In this devoted quarter of the globe, the people not only enslave Europeans and Americans wrecked on their coasts, but are continually sending *coffles* (or small caravans) of their countrymen in chains, from the interior to the coasts, and to Western Asia. Many are sold in African and Asiatic countries; but a far greater number are exported to the European colonies of America and the East Indies. This traffic in human flesh is maintained by wars, waged by the stronger kings and chiefs of Africa against the weaker, for the sake of taking prisoners; and has thus desolated extensive regions, once fertile and populous. Kings have even been known to plunder villages in their own kingdoms, to supply slave ships. Aside from its inherent cruelty, the ships which convey the slaves to other countries are so crowded, that

they endure every species of suffering, from heat and confinement, and many die on the passage.

Great Britain and the United States were formerly deeply engaged in this trade; but both nations have now forbidden it, and it is punished as piracy by the United States. The *French, Portuguese, and Spanish* still pursue it, on certain parts of the coast of Africa; and too often American and English vessels are found engaged in it, under the colors of those nations. In 18 months of 1821 and 1822, 400 slave ships, nearly half French, visited the western coast of Africa, and carried away 100,000 slaves.* The slave trade is also carried on, to a great extent, on the eastern coast. Great efforts are made by British and American armed vessels to suppress this traffic, and much has been effected. The king of Madagascar was induced by the British government to abolish it in his dominions.

A traffic in slaves, especially females, is also carried on from *Georgia and Circassia*, and the neighboring regions, to Turkey and Persia. The Mamelukes, who lately governed Egypt, were originally slaves from Georgia, and were annually recruited from that country.

STATISTICAL GEOGRAPHY.

In the preceding parts of this work, we have given general views of the state of countries, with regard to every important subject of Geography. The aspect and phenomena of Deserts, Mountains, Volcanoes, Rivers, Lakes, &c. are portrayed; and the descriptions applied, by a particular survey of the surface and waters of each of the Grand Divisions of the earth. The various Climates and corresponding Vegetables and Animals of the earth, are next described, and are illustrated, and in some respects more minutely exhibited, on the *Physical Chart of the World*, or View of Climates and Productions. The location of the most valuable Minerals is also stated.

The division of mankind by their Race and Language forms the introduction to Civil Geography. The Chart of the Inhabited World, in connection with the corresponding articles, presents a distinct view of the prevailing Religion, Government, and state of Civilization, in each country; and the subsequent chapters will furnish all the most important information, concerning the Learning, Instruction, Literary Institutions, and Character of nations, and the state of Agriculture, Roads, Cities, Arts and Commerce.

---

* Quarterly Review

Under the head of STATISTICAL GEOGRAPHY, a general view will be given of the sources of National Power, and a detailed account of the most important facts relative to the character and resources of each state. It is important to become familiar with the general views, before proceeding to this part of the work; and then the acquisition will be easy. *It will be indispensably necessary to accurate knowledge, to examine the maps in connection with the account of each country. The appropriate questions will be found in the commencement of the volume.*

NATIONAL POWER.

1277. The power of a nation may be considered, either with reference to its ability to defend itself, or the means it possesses of attacking other nations.

Countries which are rugged and mountainous, are difficult of attack. Every mountain becomes a fortress, and every pass a place of defence. This has been an important security to the liberties of Switzerland; and Norway has maintained the rights of the people inviolate, although subject to a foreign prince. In this manner, bands of robbers, and roving tribes, maintain their independence in the mountains of Turkey, Persia, and even in Italy.

1278. *Countries which are thinly settled*, are easily invaded and overrun by a foreign power, on account of their extent. But for the same reason, it is not easy to retain possession of them; and an invading army is liable to be harassed, and gradually destroyed. Such was the fact with the United States in the revolutionary war; and with Spain and Russia, when attacked by the French, some years since.

Thinly settled countries are sometimes so extensive as to furnish large armies, and thus have the power of attacking or defending other states; as is the fact with Russia. But generally, the difficulty of collecting a force from so great distances, prevents any efforts of this kind, and incapacitates them for foreign wars.

1279. *Countries which are thickly settled* are able to collect a large force, in a short time, at any point of attack; and their territory is thus more easily defended. The amount of population enables some nations to send large armies abroad, to aid, or to attack other nations, and hence these are usually most engaged in foreign wars; as is the fact with France and Great Britain.

1280. Among nations which are similar in other respects, those which possess most *knowledge and skill in the arts*, are most powerful; because they are thus enabled to provide the best arms, ammunition, and ships, and to conduct the operations of war with the greatest skill. *Wealth* is also very important to national power; as it not only furnishes the best supplies of

all kinds, but enables a nation to procure the aid of others, or to give aid to them, without sending its armies abroad.

The wealth of a country depends more on the industry, enterprise, and skill of the people in Agriculture, Manufactures, and Commerce, than on its fertility or natural riches; and these in turn, depend on the state of knowledge, information, and freedom. It would appear therefore, that the number and character of the people are *the ultimate foundation of national power;* and that its increase is usually proportioned, (under similar circumstances,) to the increase of knowledge, industry, and improvements.

In illustration of these principles, Spain, with her fertile and extensive dominions, and inexhaustible mines of gold and silver, has been a poor country; while the little republic of Holland, a marshy tract rescued from the sea by persevering industry, has been immensely wealthy, and very powerful.

1281. *In surveying the state of* EUROPE, we find in conformity with the preceding views, that Great Britain, which holds the highest rank with respect to knowledge, arts, and enterprise, possesses power which no other nation can control; and her commerce and naval force, have enabled her to exert an influence on every quarter of the globe, far more extensive than that of any other existing empire. France, Austria, and Prussia also belong to the *first class of European states;* and the immense population and extent of Russia places this empire among them, although it is inferior to the rest in arts and improvements. These are the only powers which exert a decided influence on their neighbors; and they have, in fact, settled the condition of Europe for some time past.

1282. *In the second rank*, are Sweden, Holland, Spain, and Turkey. These states are not controlled directly by any other power, and could not be controlled without difficulty; but they exert very little influence upon surrounding nations, or the general state of Europe.

1283. *In the third rank*, are Naples, Portugal, Bavaria, Saxony, Wurtemberg, Hanover, Denmark, and Switzerland. They are too feeble to resist the surrounding states without assistance, but they are important as auxiliaries, and are often courted and protected for that purpose, by more powerful nations.

1284. *In the fourth rank*, are Baden, Tuscany, Rome, and the small states of Germany and Italy. These are entirely dependent on the large states for existence; and frequently have owed their preservation to the mutual jealousies of the principal powers.

1285. In ASIA, *Russia* controls a large portion of territory, and is more formidable, than any other power. The Tartar, or

Chinese Empire, is next in extent, and has great resources; but it is confined entirely to its own territories. The small but populous Empire of *Japan*, seems to possess ample means of self-defence also; but has no communication with its neigbors.

Persia and Turkey are feeble states, which cannot even restrain the robbers of their own territories. *Arabia* is divided among too many chiefs to possess any united power; and *Afghanistan*, although a powerful collection of tribes, is enfeebled for want of firm union. *Hindoostan* is in the same condition; but is chiefly under the influence of Great Britain.

In *Farther India*, there are two important, energetic states—the empire of Burmah, and of Anam or Tonkin. They appear to have power sufficient to control the whole peninsula, and are rapidly advancing in national improvements. The *Malays* are formidable as robbers and pirates, but have no power as a nation.

1286. *The Asiatic Isles* and *Polynesia* are divided among numerous chiefs and kings, none of whom exert an extensive influence. In Polynesia, the kings of the Sandwich Isles, and Society Isles, are the most powerful, and these islands are advancing most rapidly in civilization.

1287. In AFRICA, the *Barbary States* were once formidable even to European nations by their piracies; but they have gradually declined like Turkey, and are now of little consequence. *Egypt*, under the government of an intelligent and energetic Pacha is rising in respectability and power. *The greater part of Africa* is divided among numerous kings and chiefs, some of whom are powerful, while others scarcely possess a territory equal to an American village. They are perpetually at war, and the extent and power of each is continually varying. *Congo* appears to be the principal state south of the equator. *Ashantee* has lately assumed a commanding station among the nations of Upper Guinea. Of the interior tribes, we know very little.

On the whole, it may be observed, with respect to *Asia and Africa*, that no native power, except Turkey, exerts any important influence on the rest of the world; and that the extent and condition of states is continually fluctuating. The influence and dominions of Russia and England, are rapidly extending in Asia.

MEXICO, *and the countries of* SOUTH AMERICA have become independent, and possess immense natural resources. But the state of confusion in which they have been involved, and which still prevails in some of them, and the low state of arts and improvement, must for a long time prevent them from taking an important rank in the political scale.

1288. The UNITED STATES are the only independent power of importance remaining to be described. They are happily removed

from the jealousies of European states; and therefore it is not necessary to estimate their ability for engaging in their wars.

They possess immense natural resources, and an extensive and fertile territory, furnishing the most valuable products of two zones. The people are free. They are brave and independent in their character; intelligent and well educated beyond most other nations of the globe; and rapidly advancing in arts, manufactures, commerce and wealth. No country has greater prosperity—none have more ample means of defence—and none have fewer reasons to fear the encroachments of foreign invaders, or fewer inducements to seek for foreign conquests.

NORTH AMERICA.

9,000,000 sq. ms. 23,000,000 Inhab. 2½ Inhab. to a sq. m.

The Physical Geography of North America, including its mountains, natural divisions, surface, and waters, has been already described, (page 72 to 92.) It has every variety of CLIMATE, extending through all the regions, from the polar circles to the vicinity of the equator. (*See Physical Chart of the World*, and ¶ 733--7, 745, 8, 754—9,766.) Its products have a corresponding variety; and a view of the most important VEGETABLES and ANIMALS will be obtained by examining these articles under each region, in connection with the Physical Chart of the World. It is rich in MINERAL treasures, also, as described under that head

Only three centuries have elapsed since any part of America was ranked among civilized nations; and the first European settlements north of Mexico, were commenced in 1607. The territory and resources of North America, are amply sufficient for the foundation of empires, more extensive and powerful than those of Europe. The United States is the only portion which has yet taken an important rank among the nations of the earth. Mexico and Guatemala are now independent republics. Nearly the whole civilized population of North America is found in the Mexican Peninsula—the United States east of the Mississippi River—and the British provinces bordering on the United States. The vast region lying north of latitude 50° is claimed by the Russians and British; and the territory south of this and west of longitude 96, belongs to Mexico and the United States. But the greater part of these regions is scarcely explored; and with the exception of trading houses, and the districts of California and Santa Fe, this largest section of the continent is inhabited only by the native tribes of Indians.

The GOVERNMENT, RELIGION, and state of CIVILIZATION of each division may be learned, by referring to the Chart of the World in connection with these articles; and a particular account of the state of knowledge, arts, &c., has been given under the proper heads.

ARCTIC REGIONS.

GREENLAND. (*See* ¶ 540.)

This dreary country has usually been called DANISH AMERICA, but is now believed to be unconnected with the continent. It may be said to *consist* of rocks, ice, and snow, and is nearly destitute of vegetation. Even in the southern parts, a few small junipers, willows, and birches, are the only *trees* to be found. The only *animals* are such as can endure the most intense cold—the reindeer, the polar fox, and the bear. The walrus and seal frequent the shores. Fish and fowl are tolerably numerous.

The highest *mountains* are on the west side; and the three pinnacles of what is called the Stag's Horn are visible from the sea, at the distance of forty or sixty leagues.

The *natives* are a branch of the Esquimaux or American Samoiedes. It is supposed they do not exceed ten thousand, the number having been greatly reduced by the small-pox.

There are several *settlements*, established by the Danes and Norwegians and by Moravian missionaries, chiefly in the south-west.

This country was colonized and *claimed* by the Danes. At one period, the colonists were enabled to export cattle and provisions; but it is probably a possession of very small value to the mother country.

RUSSIAN AMERICA;

OR NORTHWEST COAST.

The Russians may be regarded as the first *discoverers* of the north-western shores of America. They lay *claim* to the territory, and about 50,000 Indians acknowledge their authority.

This *coast* seems to be chiefly alpine; in some parts rising into snow-capped summits, with immense glaciers winding through its cavities. In this respect, and in its numerous creeks and isles, it bears no small resemblance to Norway. The most remarkable *mountain* seems to be that called St. Elias by the Russian navigators. It is visible at sea at the distance of sixty leagues.

The *inhabitants* of the more northern regions of this coast appear to be Esquimaux. The savages of Nootka are said to be very cruel to the captives taken in war, and have frequently proved treacherous in their attacks on trading vessels. Whales form a favorite article of their food.

They obtain valuable *furs* from the seal and other animals; and many ships visit this coast to procure them for the Chinese market. (See ¶ 1274.) A chain of *islands* stretches from Kamschatka to the promontory of Alaska, which receives the general appellation of the Aleutian Isles.

BRITISH AMERICA.

Those parts of North America which still belong to Great Britain, are extensive and some parts are fertile; but they are so thinly peopled, and in such a disadvantageous climate, that they are of little importance, when compared with Mexico and Guatemala, or the territories of the United States. The *inhabitants* of the former are estimated at nine millions; and those of the United States at thirteen, while those of the British possessions do not exceed one million.

The chief of these possessions is Canada, now divided into two provinces called Upper and Lower Canada, separated by the Ottawas River. The former is on the north of the great lakes; the lower division on the River St. Lawrence. On the eastern coast, south of the River St. Lawrence, are Nova Scotia, New Brunswick, and the islands of Newfoundland, Cape Breton and St. Johns. Labrador, and the regions around Hudson's Bay, sometimes called New Britain, are nominally subject to Great Britain, also. All the British possessions are subject to a Governor-General, residing at Quebec.

The greater part of this region is *important* only for the fur-trade and fisheries. *Manufactures* are few, unless those of flour and lumber in Canada be reckoned among them. *Commerce* is chiefly in these articles, and in the necessaries of life

LOWER CANADA.

200,000 sq. ms. 600,000 Inhab. 3 Inhab. to a sq. m.

Lower Canada nominally *extends* north of the St. Lawrence, into unexplored regions. But the only portion which is *settled* is the vale of the St. Lawrence, enclosed by two ridges of *mountains* running from south-west to north-east,

dividing the waters of this stream, from those of the northern and Atlantic declivities. (See ¶ 505.)

At the mouth of the St. Lawrence, the *surface* of the country is rugged and mountainous, and the *climate* very severe. But in the upper and more southerly portions of the province, the country is well watered and fertile, and the climate is milder. All parts, however, have the *winters* of Sweden, although situated in the latitude of France; and are liable to great and sudden heat in *summer*. (See ¶ 761.)

At Montreal, the spring generally commences six weeks earlier than at Quebec: vegetation is proportionally more vigorous and luxuriant; and the crops produced are more abundant, as they are seldom checked by the early frosts, which are common in the eastern parts of the province.

The greater part of the *inhabitants* are French, who are generally industrious. Their manners and customs are considerably tinctured with the French gayety and urbanity. The lower classes are very ignorant and superstitious, and blindly devoted to their priests. They use the French *language* universally, English being restricted to the few British settlers.

The chief town is QUEBEC, built on a lofty point of land on the St. Lawrence; which is here sufficiently deep and spacious to float more than one hundred sail of the line. The upper town is on a rock of limestone well fortified, both by nature and art; but the lower town is the chief seat of an extensive commerce.

Montreal is situated on an island in the River St. Lawrence. It is the principal seat of the fur trade, and increasing in population and importance. *Three Rivers*, or Trois Rivieres, between Quebec and Montreal, is a place of some trade.

UPPER CANADA.

140,000 sq. ms. 300,000 Inhab. 2 Inhab. to a sq. m.

The *soil* of Upper Canada, it is stated by Bouchette, is generally a fine, dark loam, mixed with a rich vegetable mould, not exceeded in any portion of North America. From the eastern frontier of the province to Lake Ontario, a distance of about 170 miles, the *surface* presents an almost uniform level of exquisite beauty, rising only a few feet above the banks of the St. Lawrence, and finally intersected in every direction by numerous *streams*. Several of these are navigable (with occasional obstructions from falls) for boats and canoes, while they offer many choice situations for the erection of mills. On the northern shores of Lake Ontario is a ridge of *heights* of no great elevation, and of inconsiderable breadth, from which the land soon descends again, and forms a level, fertile tract, extending to Lake Huron. Most of the *settlements* are between the River Niagara and Lake Huron, which is the finest part of the province.

The *climate* of Upper Canada is particularly salubrious; and epidemic diseases, either among men or cattle, are almost unknown. The *winters* are shorter, and not so rigorous as in Lower Canada. The *spring* opens, and agricultural labors commence, from six weeks to two months earlier than in the neighborhood of Quebec. The *summer heats* are also more moderate, and the autumn is in general favorable for securing the produce of all the late crops.

The *inhabitants* are generally of English origin. Many are emigrants from the United States.

York or *Toronto* is the seat of government of Upper Canada. It is situated upon an excellent harbor, sufficiently large to contain a considerable fleet.

Kingston is situated near The Thousand Isles, which lie in the passage from Lake Ontario to the St. Lawrence.

Queenstown is celebrated for a battle in the late war.

NEW-BRUNSWICK.

28,000 sq. ms. 90,000 Inhab. 3 Inhab. to a sq. m.

New-Brunswick resembles Lower Canada in its *climate* and *productions*, but it is less populous. It is accessible to ships on three sides, its coast is indented with numerous harbors, and it has an extensive and flourishing *trade* with the West Indies and Great Britain. The shores abound with cod, herring, and other *fish*. Its *soil* has a good degree of fertility, especially in the neighborhood of the St. John's, and other rivers. Its *forests* produce pines of extraordinary size; and lumber and fish are the principal articles of *export*

FREDERICKTON is the capital, situated at the head of sloop navigation on the St. John's River. It contains a college. The largest town is *St. Johns*, near the mouth of the same river. *Miramichi* and *St. Andrews*, are next in importance.

NOVA SCOTIA.

16,000 sq. ms. 150,000 Inhab. 9 Inhab. to a sq. m.

Nova Scotia is a peninsula, south of New-Brunswick. The *coast* is rugged and stony, but the *interior* is more level, and the *soil* is generally productive. The *climate* is mild, but subject to frequent fogs. There are valuable *mines* of gypsum, coal, and iron, which furnish articles of export. *Roads* are generally good, and communication easy; there are good *harbors* on the coast; and *commerce* and wealth are increasing. Gypsum, lumber, and fish, are the principal *exports*.

HALIFAX has a fine harbor. It is a naval station, and is flourishing in commerce. *Liverpool* is also a commercial place of some importance. *Windsor* has a college.

The *Island of Cape Breton* is connected with this province. It is chiefly valuable for its mines of coal and gypsum.

St. Johns, or Prince Edward, is a large island north of Nova Scotia.

NEWFOUNDLAND.

30,000 sq. ms. 64,000 Inhab. 2 Inhab. to a sq. m.

Newfoundland is a barren, hilly island, of which the *interior* is unknown. The *coast* abounds with fine harbors. It is a region of frosts and fogs. It will not produce *grain*, and is only valuable as a convenient fishing station. The *population* consists chiefly of persons concerned in the fisheries, and is very variable. They reside entirely on the south-eastern part of the island.

ST. JOHNS, is the capital; a place of great resort on account of the fisheries.

LABRADOR.

This large country was so named by a Portuguese navigator, who first discovered it. In the *inland parts* there were American Indians, and on the coast Esquimaux; but the former have mostly retired to the south, and even the latter seem gradually to withdraw. A few factories were the only *European establishments* here, till the Moravian clergy formed little settlements at Nain, Okkak, and Hopedale.

So far as examined, the *surface* of Labrador is generally hilly, and even mountainous. The *eastern coast* exhibits a most barren and iron-bound appearance, the rocky mountains rising suddenly from the sea; and is lined with thousands of islands, abounding with the eider duck and other sea-fowl. *Rivers*, brooks, lakes, and ponds, are abundant, rich in fish, and frequented by innumerable birds.

In *the interior*, the air is milder, there are many trees, and some symptoms of fertility. The *mountaineers* of the interior resembles gypsies, with somewhat of French features, from a mixture of Canadian blood. They live in a kind of tent covered with deer skin and birch bark. They profess to be Roman Catholics, and occasionally visit the priests at Quebec.

TERRITORY OF HUDSON'S BAY.

The Hudson's Bay Company claims the extensive territories on the west, south, and east of that inland sea, supposed to extend from 70° to 115° of west longitude; and allowing the degree only 30 miles, the length will be 1350 geographical miles, and the medial breadth about 350. This vast region is rendered *barren* by frost, and is only *important* on account of the valuable furs of its animals. There are some *fertile tracts* on the southern border.

The regions on the *west* of Hudson's Bay have been called New North and New South Wales; while that on the *east* is styled East Main. The most valuable *settlements* are in the vicinity of James's Bay, at Albany-fort, Moose-fort, and East-Main Factory. To the west, the Hudson's Bay Company has extended little farther than Hudson House. The Bay or Sea of Hudson commonly presents bold, rocky shores; but at intervals, there are marshes and large beaches. Even in latitude 57°, the *winters* have the severity of the Frozen Regions, already described, (¶ 765—7.) The *fish* in Hudson's Sea are far from numerous; and the whale fishery has been attempted without success. The *quadrupeds* and *birds* correspond with those of Labrador and Canada.

The northern *natives* are Esquimaux, but there are other savages in the south; and the factories are visited by several tribes. All *subsist* on the products of hunting and fishing.

UNITED STATES.

Whole Territory, 2,500,000 sq. m. 13,500,000 Inhab. 5 Inhab. to a sq. m.
28 States and Ter's. 1,000,000 sq. m. 12,700,000 Inhab. 13 Inhab. to a sq. m.

The UNITED STATES form a single republic, composed of twenty-four separate states and several territorial governments, together with an extensive territory acquired by purchase, west of the Mississippi River, which is not yet divided and scarcely explored. The whole cover a surface of two millions of square miles. About one million are occupied by 13,000,000 of civilized inhabitants; and the remainder by 400,000 or 500,000 Indians, in a savage state.

Under the head of North America, (page 72) a particular description of the mountains, geological structure, surface and waters of the United States, has already been given. They extend from the Cold Regions on the north, to the Tropical on the south, and their productions include all the necessaries, and most of the luxuries of these climates. (*See* ¶ 745, 754—8, and 759.) The climate of the Cold Region is rendered milder in the Eastern States, by the vicinity of the sea on the one side, and the lakes on the other, and by the low latitude in which it is found on this continent.

The Government of the individual states is described, page 181, and that of the Union, page 181–2. A view of religious denominations will be found, page 187. The state of learning and education is particularly described, page 200–2; and Literary Institutions, page 209 to 211

The state of Agriculture, and its variations in different districts, are given under that head, ¶ 1200 to 1207; of Roads, ¶ 1221–5, and of Cities, ¶ 1240. The state of Manufactures and Commerce are given in the articles on those subjects, and are more fully exhibited in the tables relating to these subjects. The tables of population derived from the census, will show the proportion of the inhabitants of each state, engaged in Agriculture, Commerce, and Manufactures, in 1820.*

A brief exhibition of the power and resources of the United States was given in the article on National power. No nation on earth has advanced so rapidly in population and improvements during the same period. None is now so free from all obstacles to their progress in knowledge, arts, and national wealth. Since 1790, their shipping has increased from 400,000 to 1,400,000 tons; and the exports from 20 to 70 millions of dollars, with a corresponding increase of revenue from the customs. Manufactures have also been advancing rapidly. In the same period, their population has increased from 4,000,000 to 13,000,000, or generally at such a rate as to double in 25 years.

EASTERN STATES.

MAINE.

32,000 sq. m. 399,000 Inhab. 12 Inhab. to a sq. m.

Maine is one of the most recently *settled* of the Atlantic States. The northern parts are still almost uninhabited.

It has all the *characteristics* of a primitive country, before described (¶ 158) —a rugged coast indented with numerous harbors—an uneven and hilly surface—a hard soil—and numerous lakes and streams, not well adapted for navigation.

Its *climate* is cold, but healthy, varying in moisture according to its distance from the sea. A large part of it is still covered with *forests*. *Agriculture* is little advanced. *Manufactures* are few. Its extensive seacoast and fine harbors are favorable to *commerce*, and it has been the fourth state in the Union in the quantity of its *shipping*. Its forests and grazing farms furnish the chief *exports*. The enterprise of the people has even led them to carry cargoes of ice to the West Indies, which have proved a source of profit.

PORTLAND, the capital, on Casco Bay, is a large town, with a fine harbor. It is among the first seven in the Union in the amount of its shipping.

Eastport is a commercial place and military post, on the borders of New Brunswick.

* See the Atlas for Tables relating to these subjects.

Bath, *Hallowell*, *Machias*, *Kennebunk*, and *Saco*, are the principal places of trade.

Brunswick, on the Androscoggin, is the seat of Bowdoin College. *Bangor*, at the head of navigation on the Penobscot, has become one of the principal towns of the state. It has an institution combining literary and theological education. *Waterville* has a Baptist institution, of the same character.

NEW HAMPSHIRE.

9,000 sq. ms. 269,000 Inhab. 30 Inhab. to a sq. m.

The *surface* of New Hampshire is level on the coast. In the interior, it rises into hills and mountains, which give it a rugged character. The *White Mountains* tower above all the peaks of the Apalachian Chain, and serve as a landmark to vessels at a great distance at sea. As is usual in mountainous tracts, it abounds in *lakes* and *streams*, but it has little *internal navigation*. The extent of its *sea-coast* is small.

The primitive character of its formation renders its *soil* generally difficult of tillage, and best adapted to pasturage. It is interspersed with fertile and well cultivated tracts. A large part of the state is still covered with *forests*. The *climate* is cold, but equable and healthy.

The *inhabitants* have the usual industry and good morals of New-England. Grazing is their chief *employment*, and the products of the dairies, forests, and mines, are the chief articles of *export*. *Manufactures* are not much advanced; and active commerce is not extensive.

CONCORD, the seat of government, is a flourishing town in the interior, connected with Boston by the Middlesex Canal. *Portsmouth*, on the Piscataqua River, is the only seaport. Its harbor is fine; it is open at all seasons, and is one of the naval stations of the United States. *Dover* has extensive manufactories.

At *Hanover*, is Dartmouth College, a respectable and flourishing institution; and at *Exeter*, Phillip's Academy, one of the oldest and most respectable in the state. *Franconia* contains some of the best iron mines in the United States.

VERMONT.

10,000 sq. ms. 280,000 Inhab. 28 Inhab. to a sq. m.

Vermont is traversed through its whole extent by the *Green Mountains*, from which it derives its name. They render the whole *surface* uneven, and divide it into two principal *declivities*, one towards Connecticut River, and the other towards Lake Champlain. This directs the intercourse of one division to New England, and of the other to New York and Canada. The *northern* part declines towards the St. Lawrence, into which the waters of Lake Memphremagog flow. The *Green Mountains* form the highest part of the Apalachian chain, except the White Mountains. The *streams* of Vermont are not large. Most of the state has a good *soil*, which is well watered. The *air* is serene and healthy, and the *climate* cold, but equable. The borders of Lake Champlain are subject to fevers.

Agriculture and grazing form the chief employments of the people. *Manufactures*, except those of a coarse kind made in families, are chiefly obtained from abroad, in exchange for the produce of their forests, mines, and quarries of marble, and for their cattle and horses.

MONTPELIER, the seat of government, is a small village, in a little circular valley, on the Onion River. *Burlington* is a flourishing commercial town, beautifully situated on Lake Champlain. It is the seat of the University of Vermont.

Middlebury, on the Otter River, has a college, having a medical school connected with it, at Castleton. It contains a fine quarry of marble. *Vergennes* is at the head of Navigation on the Otter River, below Middlebury. *Bennington* is one of the oldest towns in the state, and celebrated for the defeat of a party of Hessians from Burguoyne's army, in 1777.

Windsor and Brattleborough are flourishing towns on the Connecticut River.

MASSACHUSETTS.

7,200 sq. ms. 610,000 Inhab. 85 Inhab. to a sq. m.

The *surface* of Massachusetts is greatly diversified. The coast is indented with a number of bays. The eastern portions are uneven—the western, very hilly and mountainous: and the vale of the Connecticut River, level. The *soil* is equally

diversified. On the coast it is generally sandy or stony, but in the interior, fertile. The *climate* is dry and healthy in the interior. On the coast, it is rendered damp and unpleasant during some parts of the year, by north-east winds.

Massachusetts was the first *settled* state in New-England, and now has a more dense population than any other in the Union.

Agriculture has been more attended to in this state than in most others.—*Manufactures* are flourishing, and considerable quantities of manufactured articles are exported. Its *commerce* and *fisheries* extend to every quarter of the globe. Although one of the smallest states, it ranks first except New-York in commerce, and among the first in manufactures and wealth. Its citizens are distinguished for their enterprise and public spirit. Its schools and literary institutions rank among the best in the Union.

Massachusetts abounds in flourishing *towns* and villages. BOSTON is the capital, and indeed the chief city of New-England in commerce, population, and wealth. No city of the United States is more distinguished for its literary and humane institutions, and it is second only to New-York in commerce. It has a fine harbor, adorned with a number of islands, and surrounded by a beautiful and highly cultivated country. *Charlestown* is a flourishing town, opposite to Boston, forming in effect one of its suburbs. It contains the State Prison.

Cambridge, four miles distant, is the seat of Harvard University, already described, with which a medical institution in Boston is connected.

Salem is a flourishing and wealthy place, the second in New-England, and the eighth in the United States, in the extent of its commerce. It is distinguished for the extent of its trade with the East Indies. *Beverly*, opposite to Salem, on the same harbor, is extensively engaged in the cod fishery; and this is the principal employment of the inhabitants of *Marblehead and Gloucester*. *New-Bedford and Nantucket* are extensively engaged in the whale fishery. *Newburyport* is the third commercial place in the state; and has a good harbor, but difficult of access. *Plymouth* has considerable trade, but is chiefly remarkable as the landing place of the first settlers of New-England. The "forefather's rock," as it is styled, on which they landed, has been removed from the shore to the centre of the town.

Worcester, Northampton, and Springfield, are flourishing places in the interior. *Lowell, Waltham, and Fall River*, are flourishing manufacturing towns. Lowell is among the largest towns in the state. *Lynn*, near Boston, is noted for its manufacture of shoes, and for its fine sea-beach at *Nahant*. *Williamstown*, in the north-western corner of the state, is the seat of Williams' College, and *Amherst*, near Connecticut river, of Amherst College. *Andover*, north of Boston, has an academy and theological school of celebrity.

CONNECTICUT.

4,700 sq. m. 297,000 Inhab. 63 Inhab. to a sq. m.

The *surface* of Connecticut is various, but generally uneven, rising into mountains in the north-western parts. The *soil* of the Connecticut *valley* is very fine. That of the sea-shore is in some parts sandy, or stony and barren. The state has generally the hard soil of a primitive region, but is rendered productive by careful cultivation.

The *climate* of the coast is variable and moist; the interior is more equable.

The *people* are distinguished for ingenuity, and persevering industry. *Tillage* is conducted with a considerable degree of skill. Grazing is however the chief occupation. *Manufactures* are carried on extensively for exportation; especially those of cotton, wood, and metals. The *coasting trade* in provisions, cattle, &c. is considerable, particularly with New-York and the southern states. Its *foreign commerce* is carried on principally through New York, and many of its vessels and seamen sail from that port, on foreign voyages. Although one of the three smallest states in the Union, it is superior to several of the larger ones in *exports*, manufactures and *wealth*. This state has been much *distinguished* for its men of genius and learning, and for the general regularity and good order of the people.

NEW HAVEN and HARTFORD are alternately the seats of the legislature. NEW HAVEN is a beautiful town, distinguished for its college. Its harbor is not

good, but it is a place of considerable commerce. *Hartford* is a flourishing town, both in trade and manufactures. It is the seat of Washington College; of the American Asylum, the first institution established in the country for the Deaf and Dumb; and of the Retreat for the Insane, designed for the whole state.

New-London has one of the finest harbors on the coast, and is engaged in the whale and seal fisheries. *Norwich* is at the head of navigation on the Thames River, which empties at New-London, and is the seat of considerable manufactures and trade. *Middletown* is a beautiful town 30 miles from the Sound, which has a good share of foreign commerce, and extensive manufactures. It contains the Wesleyan University.

Fairfield has a good harbor and some trade. *Litchfield*, the capital of the county of the same name, has a number of factories, and is distinguished for its law-school. *Stafford*, east of Hartford, is celebrated for its chalybeate mineral springs.

RHODE ISLAND.

1,350 sq. m. 97,000 Inhab. 72 Inhab. to a sq. m.

Rhode Island is the smallest state in the Union. It *consists* chiefly of the shores and islands of Narraganset Bay, which opens the *navigation* to every part of it.

The *surface* in the southern part is level, sandy, and sterile; in the northern, hilly. The *islands*, and some portion of the coast, are remarkably beautiful and fertile.

Agriculture is not in a very flourishing state, except in the islands, which have been styled the garden of New-England. Grazing is an important occupation.

In proportion to its population, this state has more extensive *manufactures* than any other. Its *commerce* is also considerable, but chiefly with other parts of the United States.

PROVIDENCE is the third town in New-England in population, and among the first in commerce. It is distinguished for its university, and the numerous factories at the village of *Pawtucket*, which lies within its bounds.

Newport has one of the finest harbors in the world; but has lost much of its former commerce. *Bristol* is a flourishing place of trade. These three towns comprise half the population of the state.

MIDDLE STATES.

NEW-YORK.

46,000 sq. m. 1,913,000 Inhab. 42 Inhab. to a sq. m.

The *northern parts* of New-York have a rugged *surface*, a sterile *soil*, and a cold *climate*. The *eastern* partake of the character of the New-England States. The *western*, including the valley of the Mohawk, belong to the great secondary region, and have the usual level and fertile character of this formation. They abound in lakes, and have a milder, but less healthy climate, than the eastern parts

The great canal from the Hudson River to Lake Erie, which distinguishes New-York, combined with the Hudson, the great lakes on the north, and Lake Champlain on the east, give this state such advantages for *inland navigation* as are enjoyed by few others in the Union.

The *people* of New York are enterprising and industrious, and improvements in roads, canals, institutions for education and other public objects, are advancing with great rapidity.

Agriculture is skilfully conducted, and its *products* are abundant and excellent. In the west, they are chiefly those of tillage; and in the east, of grazing. *Manufactures* are extensive and flourishing. The *commerce*, both internal and foreign, is of great importance, and rapidly increasing. The *city of New York* is indeed the seat of commerce for New-Jersey, and a considerable part of New-England, and a very large portion of the imports and exports of the United States pass through this city. It is the richest, most populous, and most commercial state in the Union, and one of the largest.

ALBANY, the seat of government, is a flourishing city. It is finely situated for trade, near the head of navigation on the Hudson, and at the point of union of the Erie and Champlain canals. *New-York* is the commercial capital of this state. It is the most populous city in the United States, and among the first commercial

cities in the world. Its harbor is excellent, and open at all seasons. The scenery around is very fine. *Brooklyn*, opposite New York, is now the third city in population.

Hudson is 28 miles below Albany, at the head of ship navigation. It is the seat of considerable manufactures and commerce. *Troy*, next to Albany, is the largest inland town in the state, and at the head of natural navigation on the river. *Waterford and Lansingburgh*, villages above this, have now a sloop navigation by means of a canal. *Schenectady* is distinguished as the seat of Union College. *Newburgh, Poughkeepsie, and Catskill*, are considerable towns on the Hudson.

In the western part of this state, new towns have sprung up and increased in population, commerce, and wealth, with a rapidity scarcely rivalled; and the style of building and mode of living are said to be superior to those of the older settlements. *Rochester* is one of the most flourishing near the lakes, in trade and manufactures. *Utica, Rome, and Canandaigua* are large and flourishing places. *Buffalo* is the centre of trade for a large tract of country. *Sacket's Harbor* was the naval station of L. Ontario, during the late war. *Auburn* is the seat of the state prison and of a Presbyterian theological seminary; *Clinton*, of Hamilton College; *Geneva*, of Geneva College; and *Hamilton*, of a Baptist Theological Institution.

PENNSYLVANIA.

47,000 sq. ms. 1,348,000 Inhab. 28 Inhab. to a sq. m.

Pennsylvania is an important and wealthy state, distinguished for its agriculture, manufactures and internal improvements. It is traversed from north to south by the Apalachian chain, which is here divided into several ridges, and gives a mountainous character to the *middle section* of the state. The *south-eastern* and *north-western* parts are level or undulating. The natural inland navigation is not good, and most of the internal trade has hitherto been by ordinary land carriage; but several important *canals* and *railroads* have been made, which greatly increase its commercial advantages.

The valleys between the ridges, and the level country, have a fertile *soil*, producing grain, vegetables, and fruits of every description, in abundance. This state is rich in iron ore and marble; and beds of *coal* abound, both in the western and north-eastern portions. The *climate* varies from the cold of New-England on the north, to the mildness of Maryland and Virginia on the south. It is generally temperate and salubrious, but liable to sudden changes.

The *agriculture* of Pennsylvania is superior to that of any other part of the Union, and the land is chiefly devoted to tillage. It is next to Massachusetts, Connecticut, and Rhode Island, in the proportion of its population engaged in *manufactures*. The amount produced is very great, and is rapidly increasing. Its *foreign commerce* is not proportioned to the size of the state; but there is an extensive *internal trade* with the neighboring regions and the Western States.

HARRISBURG, the seat of government, is a pleasant town on the Susquehannah. PHILADELPHIA is the commercial capital, and the only seaport. It is the second city in the Union in population, and the first in manufactures. Its inland trade is extensive, and its market is said to be unrivalled. It is also distinguished for literary and scientific institutions, and has the first medical school in the United States.

Lancaster is a large inland town, with flourishing manufactures and trade. *Pittsburgh*, at the junction of the Allegany and Monongahela Rivers, is the second city in population, and the metropolis of the western part of the state. It is distinguished for the coal beds in its vicinity, which supply fuel for numerous manufactories; and it carries on an extensive trade with the Western States.

Easton, on the Delaware, is the chief seat of trade in the north-eastern part of the state. *Wilkesbarre* is the largest town except Easton, in the northern part, and is admired for its beautiful situation. *Carlisle* is the seat of Dickinson college. *Bedford*, on the Juniata, and *York*, on the Susquehannah, are noted for mineral springs. *Erie* is a place of considerable trade, beautifully situated on Lake Erie. *Meadville* is the seat of a college.

NEW JERSEY.

7,800 sq. ms. 320,000 Inhab. 41 Inhab. to a sq. m.

The *southern part* of New Jersey is level, sandy and barren; and thinly populated. The *northern parts* are rugged and mountainous, but productive in grain The *middle* region is level or undulating, and extremely fertile. It is well cultivated; and abounds in *villages* and *towns*, which are the great thoroughfare between the northern and southern states.

The *climate* varies, like that of Pennsylvania, with the latitude and elevation; but is more moist, from the vicinity of the sea. There are important *mines* of bog iron on the coast, and of iron stone in the northern parts.

Agriculture is well conducted, and the state produces large supplies of vegetables and other products of the farm, for the markets of Philadelphia and New-York, as well as considerable quantities of grain. The cider of New Jersey is peculiarly fine. Great industry is also exhibited in *manufactures;* and although this state is among the smallest in the Union, it is among the first in the amount of its manufactures, and in *wealth*. From the flatness of its coast, it has no good seaport; and almost all its *commerce* is carried on through Philadelphia and New-York.

TRENTON, the seat of government, is at the head of the tide navigation on the Delaware. Its manufactures and trade are considerable. *Newark* is the largest town in the State. It is extensively engaged in manufactures and internal trade; and is celebrated for the excellence of its cider. *Elizabethtown* is a flourishing town six miles from it, the oldest in the state. *New-Brunswick* is the channel of trade from the inland counties to New York, and the seat of Rutgers College.

Princeton has an elevated and healthy situation, and is distinguished for its college and theological seminary. *Morristown* is the principal place in the northern part of the state *Schooley's Mountain* is noted for its mineral spring. *Patterson* is celebrated for the falls of the Passaick River, which are the seat of important manufacturing establishments. *Burlington and Salem*, on the Delaware River, were among the earliest settlements in the state.

DELAWARE.

2,100 sq. ms. 76,000 Inhabitants. 36 Inhab. to a sq. m.

Delaware is the smallest state, except Rhode Island, in the union. The *surface* is generally level and gently undulating, and is crossed by numerous *streams*. The *soil* is generally rich, except a sandy portion on the borders of Maryland. The *climate* is milder than that of Pennsylvania.

Agriculture employs a large proportion of the population, and wheat is the most important product. The southern part is chiefly devoted to grazing. There are a number of celebrated flour mills, powder mills, and other extensive *manufacturing establishments* in this state, most of which are on the Brandywine Creek. The *foreign trade* is chiefly through Philadelphia; but the *coasting trade* is of some importance.

DOVER is the seat of government. *Wilmington* is a large town on the Delaware River, and a place of considerable trade and manufactures. *Newcastle* is also a flourishing town. Lewistown has extensive salt works.

SOUTHERN STATES.

MARYLAND.

10,000 sq. ms. 447,000 Inhab. 45 Inhab. to a sq. m.

This state is penetrated by the Chesapeake Bay, and its numerous branches The *eastern shore*, and the tracts lying on the bay, are a flat alluvion. The *western parts* enter the mountainous and primitive region. The Potomac furnishes an *inland navigation* to the most western portions of the state. A part of the alluvion is sandy, but the *soil* is generally rich, and produces the finest wheat and tobacco.

The *climate* is so mild, that cotton is raised for domestic use, and the southern countries are quite warm. The low tracts, which occupy a large part of the state, are moist and unhealthy.

Agriculture is conducted with much skill in the northern parts, and furnishes all

the products of temperate climates. *Manufactures* are not carried on extensively, except in a few portions of the state. The exports of productions, and the foreign *commerce*, are considerable.

ANNAPOLIS, the seat of government, is a small town on the bay, with some trade. *Baltimore*, the commercial capital, is on a bay running up from the Patapsco River. It is divided by a small stream, into two parts—the town and Fell's Point. The latter is the principal seat of commercial business, which is in a flourishing state.

Fredericktown is the largest town in the state, next to Baltimore. *Havre de Grace* is situated on the principal ferry, at the mouth of the Susquehannah River.

VIRGINIA.

66,000 sq. ms. 1,211,000 Inhab. 18 Inhab. to a sq. m.

Virginia is the largest, and one of the most populous states in the Union. The Apalachian Chain covers the whole *middle section* with its ridges, and gives it a rugged surface. The country *east of the mountains* descends gradually to the flat and sandy alluvion of the coast. The district *west of the mountains* is hilly.

The *soil* varies very much—sandy and sterile on the coast—extremely fertile on the banks of rivers—and productive in the valleys of the Alleganies.

The *climate* is equally varied—hot, moist, and unhealthy in the lower alluvial country—and cool and salubrious among the mountains. This state has the most valuable *productions* of Temperate Regions; and the southern part has some belonging to the Warm Regions. Virginia is also rich in iron, coal, and other *minerals* of value.

Agriculture is not well conducted, except among the mountains. Wheat and tobacco are the principal products. The *manufactures* are chiefly domestic, except those of metals. The exports are valuable; but *commerce* employs only a small part of the population.

RICHMOND is the largest town and the seat of government, at the head of ship navigation on the James River. Its favorable situation for trade in the centre of the state, and the valuable coal mines in its vicinity, render it a flourishing place.

Williamsburg was the former metropolis, and is the seat of William and Mary College. *Norfolk*, on Elizabeth River, is the principal seat of foreign commerce, and a flourishing city. There is a naval station at *Portsmouth*, on the opposite side of the River. *Petersburg* is a place of some trade, both internal and foreign. *Fredericksburg* is also flourishing. *Wheeling*, on the Ohio, is the channel of a great deal of business. *Yorktown* is celebrated for the surrender of Cornwallis, in the revolutionary war. *Charlottesville* is the seat of the University of Virginia, and *Lexington* of Washington College. *Prince Edward County* contains the flourishing college of Hamden Sidney.

DISTRICT OF COLUMBIA.

100 sq. ms. 39,000 Inhab. 39 Inhab. to a sq. m.

This is a small district, ten miles square, *lying* on both sides of the Potomac, which was ceded to the government of the United States, by the states of Virginia and Maryland. It *contains* the city of Washington, with Georgetown and Alexandria.

WASHINGTON is laid out on an extensive and regular plan, as the seat of government of the United States. It is not yet closely built, and the clusters of houses, with large vacant spots, appear like a number of villages. The public buildings are magnificent. It is at the head of ship navigation on the Potomac, and has an extensive navy-yard, at which the largest ships can lie. It contains the Columbian College.

Georgetown, two miles distant, is a considerable place of trade, and has a Catholic College. *Alexandria* is a large and flourishing commercial town.

NORTH CAROLINA.

50,000 sq. ms. 737,000 Inhab. 15 Inhab. to a sq. m.

North Carolina is *divided* into the low and sandy alluvion on the coast—the middle country on the declivity of the Alleganies—and the high country among these mountains. Its *coast* is flat, and lined with sand-bars and islands. It is furnished with numerous sounds and inlets, but has no good *harbors*.

The *soil* varies with the geological character; but is generally unproductive except in the valleys of the streams, and among the mountains. The *climate* is unhealthy in the low country; but very agreeable in the elevated tracts. It *produces* the crops both of the northern and southern states. Its gold mines are very valuable.

The *people are chiefly employed* in the raising of grain, rice, and cotton. In the *pine-barrens*, large quantities of pitch, tar, and turpentine are made. The *manufactures* of this state are chiefly domestic. Its *commerce* is limited, for want of good harbors; and there is no considerable *seaport*.

RALEIGH, the capital, is a handsome town on the borders of the high country. *Chapel Hill*, 27 miles from Raleigh, contains the university of the state. *Newbern* is the largest town in the state, and has considerable trade. *Fayetteville*, at the head of boat navigation on Cape Fear River, is next in size; and is one of the most flourishing commercial places. *Wilmington*, 34 miles from the sea, is the chief port for shipping. *Edenton* is a village well situated for trade.

SOUTH CAROLINA.

33,000 sq. ms. 581,000 Inhab. 18 Inhab. to a sq. m.

This state resembles North Carolina, in *surface* and *soil*. Its *climate* is warmer. Northern vegetables and fruits do not flourish, except in the elevated tracts. Its *productions* are chiefly cotton and rice; and the culture of these forms the principal source of wealth, and produces a large amount of valuable exports. *Manufactures* are chiefly domestic. Most of the trade is carried on by ships from other states; yet this state has a large share of *commerce* and *wealth*.

COLUMBIA is the seat of government, in a healthy, agreeable situation on the River Congaree. It contains the University of South Carolina. *Charleston* is the commercial capital, and the only city of considerable size in the state. It is situated on a low peninsula between Ashley and Cooper Rivers, which form a fine harbor at their junction. It is a place of importance for commerce and wealth; and the largest city except Baltimore, in the Southern States. *Georgetown* is a place of trade also, but its situation is unhealthy. *Camden* has an extensive inland trade. *Beaufort*, situated on an island, has one of the best harbors in the state. *Eutaw Springs* is a small stream falling into the Santee, north of Charleston, celebrated for an important battle, in the revolutionary war.

GEORGIA.

60,000 sq. ms. 516,000 Inhab. 8 Inhab. to a sq. m.

Georgia resembles the Carolinas in its *surface* and *soil*. The *high country* is not so extensive or elevated, but the soil is strong and productive in grain. The *middle country* is fertile. In the south, the *climate* is sufficiently warm to produce the sugar-cane. It is the most *thinly settled* of all the Atlantic States.

The cultivation of cotton is very profitable, and employs almost all the people, to the exclusion of other branches of *agriculture*. Indigo was formerly an important product of this state; but is now generally neglected. *Domestic manufactures* are considerable. The *commerce* is extensive, but chiefly carried on by northern ships. The gold *mines* in the northern part of Georgia are very productive.

MILLEDGEVILLE, the seat of government, is a thriving town. *Savannah* is the commercial capital, and has extensive trade. *Augusta* is an important seat of inland trade, at the falls of the Savannah River. *Darien*, on the coast, is a place of some trade. *St. Mary's* has a good harbor, and some commerce also. *Athens* is the seat of the university of Georgia. *Macon* is a flourishing town

WESTERN STATES.

ALABAMA.

50,000 sq. ms. 309,000 Inhab. 6 Inhab. to a sq. m.

Alabama resembles Georgia in *surface* and *climate*, except that the southern portion extends farther into the Tropical Region.

The *soil* of this state is celebrated for its fertility, and is admirably adapted to cotton. The *northern part* lies in the vale of the Tennessee River, and the northern and central regions enjoy, from their elevation, a fine, healthy climate. The *southern part* is frequently visited by malignant fevers.

This state is thinly *settled*. It is almost devoted to the *culture* of cotton. An

extensive *commerce* is carried on in this article, from the ports on the Gulf of Mexico.

TUSCALOOSA, the seat of government, is a new and small settlement, containing the State University. *Mobile* was the first settled town in Alabama, and is the principal seat of its commerce. *Blakely*, on the opposite side of Mobile Bay, is also a place of trade. *Huntsville* is a flourishing town, and the principal in the vale of the Tennessee. *Florence*, on the Tennessee, is also flourishing.

MISSISSIPPI.

50,000 sq. ms. 136,000 Inhab. 3 Inhab. to a sq. m.

The greater part of Mississippi belongs to the valley of the Mississippi River, and descends towards it. The *southern portion* is flat; the *northern*, elevated and waving. The *soil* is very fertile, like that of Alabama, and the climate similar. The *population* is thinner than that of any state east of the Mississippi. Cotton is here also the chief article of *culture*, and a source of wealth. *Grain* and *provisions* are brought from the states on the Ohio. *Manufactures* are few, and the only *commerce* is in cotton, provisions, and the necessaries of life.

JACKSON, on Pearl River, is the seat of government. *Natchez* is the largest town in the state, and the only place of much trade. Its exports of cotton, and the passage of steam-boats to and from New-Orleans, render it a place of considerable business. At *Washington* is Jefferson College. *Gibson Port*, on Bayou Pierre, has a considerable trade.

LOUISIANA.

48,000 sq. ms. 215,000 Inhab. 5 Inhab. to a sq. m.

Louisiana is a low, level tract, forming the delta of the Mississippi. It is crossed in every direction by the outlets and branches of the river, and has numerous *swamps* formed by its inundation. For 30 miles from the mouth, the land is a continued morass. The banks are above the level of the adjacent country; and *levees*, or dikes, are necessary to protect it from the floods. These sometimes give way, and great devastation is produced. One-fifth of the state is occupied by vast *prairies*, which feed and fatten large numbers of cattle.

The *soil* of Louisiana is proverbially fertile, like that of Egypt, from the effects of the annual inundations. Its *climate* is that of the Hot Regions, which permits vegetation throughout the year. Its *productions* include some of the most valuable tropical vegetables and fruits.

Sugar and cotton are the principal articles of *culture*. The state is chiefly dependent on the upper country for *grain*. *Manufactures* are principally obtained from abroad. The *commerce* is extensive, embracing the products and supplies of almost the whole basin of the Mississippi.

NEW-ORLEANS, the capital, from its situation at the mouth of the Mississippi, is the centre of this trade. Steam-boats are continually employed in transporting the produce of the upper states, and the imports of this city. Its situation is very low, and its climate very unhealthy for strangers, especially in the warm season; but, notwithstanding these disadvantages, it is likely to become one of the most important commercial cities of the United States. It contains a college. The inhabitants of New-Orleans, and indeed of Louisiana, are chiefly French; and the French language is most in use.

There are no other towns of importance. *Madisonville*, on Lake Ponchartrain, is the seat of a navy-yard. *Alexandria*, *Opelousas*, and *Baton-Rouge*, are thriving places. *Natchitoches* is the most western settlement of the United States. *Jackson* has a college.

OHIO.

40,000 sq. ms. 937,000 Inhab. 23 Inhab. to a sq. m.

The *surface* of Ohio is generally level, and is no where mountainous. On the borders of the Ohio valley it is hilly and irregular. The *soil* is uncommonly fertile, and produces luxuriant crops of grain and maize. The *climate* in the south is so mild, that cattle require little attention in the winter; and are frequently left without shelter. The *northern parts* have a colder climate.

Agriculture is pursued with great industry and success. Large numbers of cattle, horses, and swine, are raised in the woods and prairies, and form a part of the exports. Orchards flourish here. *Manufactures* are more advanced than in any region west of the mountains; and some of the articles are not surpassed by any other of American manufacture. The trade of this state is important; and it is the channel of *commerce* between the western and the Atlantic States. It has *increased* in population and wealth with wonderful rapidity. In 1790, it contained 3,000 inhabitants; in 1800, 45,000; and in 1830, 937,000.

COLUMBUS, the seat of government, is a new settlement. *Cincinnati* is a handsome and flourishing city, the largest except New-Orleans, west of the mountains. It has a college and medical institution, and a theological seminary, and is a place of considerable trade, wealth, and refinement.

Steubenville is one of the largest places, next to this, and has important manufactures. *Chilicothe* is among the largest towns of the state. *Marietta* is one of the oldest settlements remarkable for the remains of ancient forts in its neighborhood. *Zanesville* is a flourishing town on the Muskingum River. *Cleaveland* is the principal town on Lake Erie. *Athens* is the seat of the Ohio University, *Hudson* of the Western Reserve College, *Oxford* of Miami College, and *Gambier* of Kenyon College.

INDIANA.

34,000 sq. ms. 343,000 Inhab. 10 Inhab. to a sq. m.

The *surface* of Indiana is uneven on the *borders* of the Ohio River; but the greater part of the state consists of extensive plains covered with forests, and of prairies. The *soil* is generally very fertile. The *climate* is mild, and generally healthful; but the low districts are subject to fevers.

The rivers of this state furnish an extensive *inland navigation;* and its connections with the lakes on the north, and the Mississippi on the south, give it peculiar *advantages for trade*. Between, 1800 and 1830, the population increased from 5,600 to 343,000.

Agriculture is well conducted, and its products are abundant. *Manufactures* are yet in infancy. The principal *exports* are grain, provisions, cattle and lumber.

INDIANAPOLIS, the capital, is a flourishing town at the head of steam boat navigation on the White River. *Vincennes*, the oldest town in the state, is one of the principal seats of trade. *New Albany* and *Madison* (which contains a teacher's seminary) are also flourishing places. *Bloomington* contains Indiana College, and *South Hanover* a College and Theological seminary. *Vevay* is a Swiss settlement, at which wine is made.

ILLINOIS.

59,000 sq. ms. 157,000 Inhab. 3 Inhab. to a sq. m.

Illinois is remarkably level; and more than half its surface is covered with prairies. Its *soil* is excellent, but some parts are rendered unproductive by the want of water. It contains very valuable *mines* of lead, and abounds in coal. The *climate* is various in different parts; but is moist and unhealthy in many districts. It is well adapted to cotton and vines in the south, and grain in the north.

The Mississippi, Missouri, and their branches, and Lake Michigan, furnish extensive *channels of trade;* and Illinois is rapidly advancing in *population* and *improvements*. *Agriculture* is very productive, and cattle are raised in great numbers. Among the *manufactures*, are lead, castor oil, and salt, which is made in great quantities at *Shawneetown*. The principal *exports* are cattle, provisions, and grain.

VANDALIA is the seat of government. *Edwardsville* is a place of some importance. *Karkarkus* and *Cahokia* are old French settlements, in a flourishing state. *Galena* is important for its lead mines; and *Chicago* for its trade on the lakes. A college is established at *Jacksonville*; and several literary institutions at *Alton*, on the Mississippi.

KENTUCKY.

40,000 sq. ms. 687,000 Inhab. 17 Inhab. to a sq. m.

The *surface* of Kentucky is uneven, spreading into plains on the west and rising into mountains on the east. The limestone on which it is based abounds

in *chasms* and *caves*, which absorb the streams of some districts in the summer. The *rains generally flow* in deep channels, with rocky banks, sometimes 300 feet high, which render the scenery very fine. The *soil* is generally rich. The *climate* is agreeable and healthful, except on some low tracts.

Hemp, tobacco, and grain, are the chief articles of *culture*. These, with provisions and live stock, are the principal *exports*. The *manufactures* of Kentucky are considerable in amount. *Salt* is made in great quantities from the numerous salt springs; and *nitre*, from the earth of the nitre caves. The *trade* is chiefly through New-Orleans.

FRANKFORT is the seat of government. *Lexington* is the largest town, and is advanced beyond most others in this region, in wealth and refinement. It is the seat of the Transylvania University. *Louisville*, on the falls of the Ohio, is a flourishing place, both in commerce and manufactures. *Maysville* is also a commercial place. *Newport* has a beautiful situation, opposite to Cincinnati. *Danville*, *Augusta*, *Bardstown*, and *Princeton* and *Georgetown* have colleges, of different denominations.

TENNESSEE.

40,000 sq. ms. 681,000 Inhab. 17 Inh. to a sq. m.

Tennessee is *divided* by the Cumberland Mts. into East and West Tennessee.

East or *Upper Tennessee* is an elevated mountainous region, lying among the chains of the Allegany Ridge. It abounds in fine mountain *scenery*, and has been *called* the Switzerland of the United States. The *valleys* are fertile, and well watered. The *climate* is temperate, and the *productions* resemble those of the northern states.

West Tennessee lies on the declivity of the Alleganies. Its *surface* is hilly and uneven, gradually becoming level as it approaches the Mississippi. The *soil* is fertile. The *climate* is so warm as to produce cotton; and cattle rarely need shelter in the winter.

Cotton, tobacco, and hemp, are the principal articles of *culture* in Tennessee; but grain is also raised, and grazing is an important occupation in some districts Iron, hemp, and flax, are *manufactured* to a considerable extent. The *trade* with adjoining states is important.

NASHVILLE, the capital, is the largest town in the state. *Knoxville* is the chief town of East Tennessee. Both of these places are the seats of colleges. *Greenville* also has a college.

MISSOURI.

60,000 sq. ms. 140,000 Inhab. 2 Inh. to a sq. m.

Missouri is generally a region of prairies and table-lands, much of which, as already described; (¶ 501-2,) is almost destitute of timber and water. It is crossed by the Ozark *Mountains*, which form a rugged tract of considerable extent. Earthquakes are not unfrequent in some parts of this state. The *soil* is not generally productive. The valleys of the streams are very fertile. The south-eastern portions are rich in *minerals*, and the lead mines are the most valuable in the United States.

The *climate* is temperate, dry, and very serene, exempted from extremes either of heat or cold. It *produces* the fruits and vegetables of temperate regions, and the wine-grape might probably be cultivated to advantage. *Agriculture* is the chief occupation of the people. The only *manufactures* except domestic, are those of lead. This state carries on a considerable *trade*, chiefly with New-York, Philadelphia, and Pittsburg, in the produce of its mines, the cattle of its prairies, and the furs of the western regions.

JEFFERSON CITY on the Missouri, is the seat of government. *St. Louis* is the principal seat of commerce; and the largest town west of the Mississippi. Its situation, near the junction of two great rivers, is remarkably fitted for commerce; and is said to be unrivalled in beauty and salubrity.

St. Charles is a thriving place. *St. Genevieve* is one of the chief markets of the lead mines. *Herculaneum* has an important trade in lead; and is the seat of several shot manufactories. *Potosi and Mine-au-Burton* form a single village, in the centre of the lead mine district.

TERRITORIES OF THE UNITED STATES.

TERRITORY OF MICHIGAN.

30,000 sq. ms. 31,000 Inhab. 1 Inh. to a sq. m.

Michigan is level and fertile in the south-eastern parts, where the settlements are chiefly situated. The *borders* of Lake Michigan are sandy, and almost destitute of vegetation. The territory is remarkably well watered with small streams.

The climate is temperate in the south, and cold in the north; the fruits of temperate climates are produced abundantly. The trade of this territory is considerable, in proportion to its population. Its waters are the channel of an important fur-trade with the western regions; and the seat of extensive fisheries.

Detroit is the seat of territorial government, and the largest town of Michigan. It is a healthy and flourishing place of trade. *Michilimackinac*, (usually called Mackinaw,) is an important military post, and village, on an island in the straits of the same name. It is the channel of considerable trade.

HURON OR NORTH-WEST TERRITORY.

The North-West Territory has an uneven, but not a mountainous *surface*. The *southern parts* and the river vales are fertile. The *northern parts* are sterile, but abound in mineral treasures; especially in extensive deposits of iron, copper, and lead, which will probably be of great importance hereafter.

This territory is chiefly *inhabited* by Indians. Its shallow lakes *produce* a great quantity of the wild rice, a grain resembling oats, which they gather for food. The *climate* is very cold in the north, but temperate and serene in the south. *Prairie du Chien* is a settlement at the mouth of the Wisconsin River.

MISSOURI TERRITORY.

The extensive tract, lying west of the state of Missouri is but partially explored. It has already been particularly described so far as it is known. (¶ 503.) It is at present, and for a length of time must be, only a range for tribes of savages, and herds of buffaloes; and there is little probability that it can ever become the residence of an agricultural nation.

A few military posts are established in it. It has a source of *wealth* in the skins of the buffaloes, which traverse its plains in vast herds.

OREGON OR WESTERN TERRITORY.

The Oregon Territory lying between the Rocky Mountains and the Pacific Ocean has only been crossed by travellers, except in one or two routes, and is very little known. It is watered by the Columbia or Oregon River, and traversed by a ridge of mountains near the coast.

The *soil* is in some parts excellent; in others rugged and sterile. The *climate* on the coast is milder than on the Atlantic; but among the mountains, it is of course cold. (See ¶ 506 and 758.)

Indians are almost the only *residents*. *Astoria* is a small settlement of fur-traders, at the mouth of the Columbia River.

TERRITORY OF ARKANSAW.

30,000 Inhab.

Arkansaw is level and marshy on the Mississippi, but is crossed at the distance of 80 miles from that river by the Ozark mountains, which terminate in elevated land on the west. In the *eastern part*, there are rich alluvial tracts; the *western* portions are dry and sterile. The *streams* are frequently dry in summer; and salt plains occur, which renders the waters of many brackish.

The *climate* is various, not only from the difference of latitude, but of elevation. *Agriculture* is little advanced in this region of prairies and forests; and the only *manufactures* are the most necessary and coarse articles.

Arkopolis, or Little Rock, on the Arkansaw River, is the seat of territorial government, and is increasing in size. There is a small settlement at *Arkansaw*.

FLORIDA.

54,000 sq. ms. 34,000 Inhab.

Florida is a flat, sandy country, interspersed with swamps, some of which are of great extent. A ridge of limestone rocks runs through the middle of the pen

insula. The soil is generally sandy and barren: but on the rivers, it is extremely fertile. The climate is hot but liable to great changes. The productions are those of the Tropical Regions. It produces the live oak, the most valuable kind of ship timber, in great abundance. The population is very thin, chiefly composed of Spaniards.

TALAHASSEE is the capital. *St. Augustin* is in a pleasant situation, and has a good harbor. *Pensacola* is on a low spot. Both places have some commerce. *Amelia Island*, near St. Mary's, was at one time a great resort for trade. It is now the seat of a military post, called *Fernandina*.

SPANISH NORTH AMERICA.

The Spanish colonies in North America were divided into Mexico and Guatemala. Both are now independent republics.

MEXICO.

1,500,000 sq. ms. 7,700,000 Inhab. 5 Inhab. to a sq. m.

The *surface* of Mexico is irregular, as will be seen in the second physical section of North America, page 72. Its *shores* are low and flat; but the *interior* rises into a lofty table-land which extends north, spreading wider as it proceeds, to the boundary of the United States.

The *north-western portions*, forming Old and New California, have an uneven surface. The province of *Texas*, bordering on the United States, is level, like the delta of the Mississippi.

The *soil* is of course very various. The *north-eastern* portion forms a part of the great American desert, already described. The *shores* are very fertile. The *table-land* is dry, and some districts barren on this account, particularly north of the tropics; but there is a large proportion of productive land.

The *climate* varies chiefly with the elevation—hot and unhealthy on the coasts—temperate and delightful in most parts of the table-land—and cold in others. The *vegetables* of course comprise those of all the zones. The *most valuable products* of Mexico are derived from its mines of silver and gold, which have long been celebrated for their richness, and furnish more than half the silver in the known world.

The *population* of Mexico is generally very thin, except in the central regions around the capital. Large tracts have never been *explored*, and serve only as pastures for immense herds of cattle. The *settlements* have not extended east of the Rio del Norte, or north of Santa Fe. Extensive tracts are occupied by independent tribes of *Indians*. The Spanish inhabitants are more corrupt and less intelligent than the natives of the mother country. The mass of the people are ignorant and superstitious.

Agriculture is conducted with a considerable degree of skill, on the table-land. *Manufactures* are scarcely attended to, except that of plate. *Commerce* consists chiefly in the exchange of silver, gold, and tropical products, for manufactured articles.

This country was once the seat of a powerful *native empire*, in which some of the arts had arrived at a considerable degree of perfection, and many *remains* of ancient buildings and monuments are still found. The most remarkable is the brick Pyramid of Cholula, on the top of which was a temple of the Sun.

MEXICO, the capital, is among the most populous cities of America, and one of the finest in the world, in its situation and appearance. It is the great mart of the country, and the seat of its government and universities.

Acapulco is the seaport of Mexico on the Pacific. It was the seat of the Spanish trade with the Philippine Isles, and the storehouse of immense wealth. Its port is a basin, cut from the solid rock, and is capable of receiving the largest vessels. Its situation is unhealthy, and its population only 4,000, chiefly negroes. *Vera Cruz*, on the gulf of Mexico, is the chief commercial port of Mexico, and the centre of most of its trade with Europe and the West Indies. *Tampico* is a port also much frequented.

Guanaxuato is a large and flourishing city, celebrated for its mines of gold and silver. *Zacatecas* is also distinguished as one of the principal mining towns. *Puebla* is distinguished for manufactures of earthen ware, iron, and steel. *Santa*

Ft is the most northern town of any importance in Mexico. *Monterey*, the capital of New-California, is a village of only 700 inhabitants.

CENTRAL AMERICA OR GUATEMALA.

200,000 sq. ms. 2,000,000 Inhab. 10 Inhab. to a sq. m.

The Republic of Central America occupies the southern portion of the Mexican peninsula. The whole country is *mountainous*. More than 20 *volcanoes* are in constant activity, which occasion frequent earthquakes.

The *soil* is very fertile, and produces the most valuable tropical vegetables. The farming districts *furnish* cattle and sheep in abundance. This country contains few *mines;* the state of cultivation is therefore much better than in the other Spanish colonies, and the country more populous.

GUATEMALA, the capital, has been twice destroyed by earthquakes, but has been rebuilt with great magnificence. *Chiapa de los Indos* is an Indian city, respectable for its size and wealth.

Bâlize is a British settlement, on the Bay of Honduras, at which mahogany is procured.

NATIVE TRIBES OF NORTH AMERICA.

Only three centuries ago the whole of North America was a dreary wilderness, occupied by the native tribe of Indians. Extensive tracts are now inhabited by civilized nations. The numerous tribes once found on the eastern coast, have gradually diminished, as the white population increased, and many have become extinct. They have been destroyed in part by the new diseases which they took from the whites, and still more perhaps, by the habits of intoxication they learned. But a large part of this extensive division of the world is still occupied by savage tribes, although nominally included within civilized governments.

The northern and north-eastern coasts are inhabited entirely by the *Esquimaux*, who derive their subsistence chiefly from the sea. They *resemble* the Samoiedes of Asia in appearance, and like them, are dull in intellect, mild in their disposition, and filthy in their habits. They do not appear to be regularly organized in tribes. The Moravians have established several *missionary stations* among them, and find them very docile.

Most *other Indians* of North America are formed into distinct tribes. Several now remaining in the United States, are really independent communities, and are allowed to hold their lands, and continue under their own government and laws, so far as they do not interfere with the laws in the Union.

The *interior of North America*, from the borders of the Esquimaux to the St. Lawrence and the great lakes, is occupied chiefly by the various tribes of the Knistenaux and Chippewayans. The Knistenaux are the most intelligent, mild, and honest. These tribes inhabit the northern part of Missouri Territory, and extend as far east as Lake Michigan. There are two or three missionary stations among them; and a few small communities are partially civilized.

The principal tribes between the St. Lawrence and the Potomac, were the *Mohekanneews*, or *Mohegans*, and the *Iroquois*, or Six Nations.

A few of the Mohekanneews still *remain* scattered through New-England and its islands. About 5,000, chiefly Iroquois, resided till lately in the western part of the State of New-York. Some of these have become civilized and Christians, from the instructions of missionaries and the agents of government. Among these were several tribes on the island of Martha's Vineyard, of which there are still considerable numbers remaining, but almost destitute of religious instruction.

The most important tribes in the United States, are those living between the Tennessee River and the Gulf of Mexico; the Cherokees, Chickasaws, Choctaws, and Creeks, amounting to 60,000. They will soon be removed beyond the Mississippi.

These nations, especially the Cherokees, have *acquired* most of the arts of civilized life; and many cannot be distinguished from the whites, with whom they

have intermarried. They are friendly to our government, which has united with missionary societies in sending teachers and mechanics, to give them *instruction* in Christianity and the arts of civilization. Even now, there are many among them, who are well *educated*, and possess large estates, with numerous slaves.

The *Seminoles* formerly belonged to the Creeks, but are said not to have so good a character.

In *Mexico*, and west of *Arkansaw Territory*, several powerful tribes are found who use horses, taken from the immense herds which are found wild in that region.

The nations best known in the *Missouri Territory*, are the Sioux, the Pawnees, the Ricarees, and the Osages. They are remarkably tall, robust, and ferocious, and fond of war. Their country abounds in wild animals, furnishing excellent skins and furs, which they sell to the whites.

Several *missionary stations* are established among these tribes, with favorable prospects; and also among those who have removed from their former residence to the Arkansaw Territory.

Some *Indian nations in Mexico* have been partially civilized, and are now governed by Catholic priests. Others live in towns by themselves, with an Indian governor appointed by the Spaniards.

The *Snake Indians* are a mild inoffensive race, living among the Rocky Mountains, who are much oppressed by those around them.

The tribes *west of the Rocky Mountains* are very little known. Many of them are called Flathead Indians, from the flatness of their skulls, produced by pressing their heads in infancy.

It is supposed that there are 150,000 Indians between the Mississippi and the Rocky Mountains, and about the same number beyond these mountains; all of which are in a savage state, ignorant of Christianity, and sunk in vice. There are probably 100,000 east of the Mississippi, making 400,000 in the whole, including those who are removing.

The great resemblance of the American Indians to the Asiatics, in features and customs, renders it probable that they came from Asia.

WEST INDIES.

The West India Islands form an extensive curvilinear chain, from the southeastern point of North America, to South America. The *large islands* are traversed by a range of mountains already described, [¶ 458] which renders the interior rugged. The *Caribbee Islands* are generally mere mountains rising from the sea, and present an abrupt, but beautiful appearance. They *contain* almost a continued range of volcanoes and volcanic summits, some of which are occasionally active.

The *soil* of the West Indies is usually very fertile on the plains, and luxuriant in most *productions* of the Torrid Zone. Sugar and coffee are the *most important*, and are exported in large quantities. Cacao, and the common spices, ginger, pepper, pimento, &c. are also raised; and great quantities of oranges and other tropical *fruits* are among their exports. Maize, yams, and sweet potatoes are raised *for food;* but these islands are principally dependent on other countries for *grain*.

The *climate* is mild and delightful in winter; but is extremely hot, and dangerous to strangers, at other times. It is described particularly, ¶ 737. In some of the *elevated tracts*, we find the climate and productions of the Temperate Zone.

St. Domingo or Hayti contains an independent commonwealth of Africans—the Haytian Republic. The other islands are divided between the Spanish, English, French, Swedes, Danes, and Dutch, under the direction of governors from their respective countries.

The following table exhibits their division, their size, their population in 1828, according to Humboldt, and their exports to the United States in the same year.

The slaves of the British Islands are now all liberated.

WEST INDIA ISLANDS.	Square miles.	Total Inhab'ts.	Slaves.		Ex. to U. S. Dolls.
Hayti	28,000	820,000			2,350,000
Spanish Islands.		943,000	281,000		
Cuba	56,000	700,000	256,000		6,950,000
Porto Rico	4,000	229,000	25,000		813,000
Marguerite		18,000			
British Islands.		726,000	626,800		
Jamaica	6,400	402,000	342,000	slaves liberated 1834.	
Trinidad	1,700	41,500	25,000		
Tobago	140	16,000	14,000		
Grenada	110	29,000	25,000		
Barbadoes	166	100,000	79,000		
St. Vincent and Grenadines	130	28,000	24,000		
St. Lucia	225	17,000	13,000		
Dominica	29	20,000	16,000		1,860,000
Montserrat	78	8,000	6,500		
Antigua	93	40,000	31,000		
Nevis	20	11,000	9,000		
St. Christophers	70	23,000	19,500		
Virgin Isles	— —	8,500	6,000		
Bahama Is.	— —	15,500	11,000		
Bermudas Is.	— —	14,500	5,000		
Anguilla and Barbuda		2,500	1,800		
French Islands.		219,000	178,000		
Martinique	370	99,000	78,000		930,000
Gaudaloupe and dependencies	675	120,000	100,000		
Swedish Islands.					
St. Bartholemew	60	8,000	4,000		185,000
Danish Islands.					
Santa Cruz	100	32,000	27,000		
St. Thomas	40	7,000	5,500		1,390,000
St. John's	40	2,500	2,300		
Dutch Islands.					
Curacoa	600	11,000	6,500		
St. Eustatius and Saba	22	18,000	12,000		950,000
St. Martin	90	6,000	4,000		

REPUBLIC OF HAYTI OR ST. DOMINGO.

St. Domingo is the second island in *size* in the American Archipelago. It was *formerly divided* between the Spaniards in the eastern portion, and the French in the western. The slaves of the French revolted, and after destroying the white inhabitants, established two independent states, which have since been united in the Republic of Hayti. The Spanish portion of the island has recently become subject to the control of the Haytian government.

The West Indian range of *mountains*, already alluded to, ¶ 458, passes through this island, some peaks of which are said to be 6000 feet high. The *soil* is generally fertile and well-watered; and nothing but the indolence of the inhabitants has prevented its being one of the most *productive* and wealthy of the West Indian Islands. Hides are an important article of *export*.

The *people* of the Haytian Republic exhibit a commendable degree of industry and enterprise, and are making considerable advances in arts and knowledge. Free schools and a college have been established; and foreign teachers have been employed at the expense of the government.

CAPE HENRY is the capital of Hayti, situated on a fertile plain. Its harbor is one of the best in the island. *Port au Prince*, on the western side of the island, has a good harbor also, but its situation is low, and its climate unhealthy. *St. Domingo*, the capital of the late Spanish possessions, was the

first city built by Europeans in the New World. It has now become a place of little importance.

SPANISH ISLANDS.

CUBA.

Cuba is the largest and most celebrated island of the West Indies. It is *divided* by a central ridge of mountains, which furnish numerous streams to the plains. The *soil* exhibits the highest degree of fertility. Sugar and coffee are *raised* to a large amount; the *tobacco* is more valued than that of any other country, and these are important articles of *export*, as well as spices and other tropical productions, and hides. This island also contains valuable *mines* of copper and iron.

The *commerce* of Cuba is extensive and valuable, and it is increasing in *population* and *wealth*. It is more deeply engaged in the importation of *slaves* than any other part of America.

HAVANNA is the capital, situated on a harbor remarkable for its size, safety, and the strength of its fortifications. It has been the principal seat of trade for the Spanish possessions in the neighboring seas, and has become a populous and wealthy city. *Matanzas* is a large town not far from it, which has a flourishing trade, especially with the United States. *St. Jago de Cuba*, on the south-eastern part of the island, has a good harbor, but is not flourishing.

PORTO RICO.

Porto Rico is the fourth of the West India Islands in *size*, and resembles the rest in *climate*, *fertility*, and valuable *productions*. We are less acquainted with this than with most of the other islands. The exports in 1803, were stated at 9,000,000 of dollars.

St. Juan, the capital, is situated on a good harbor, on the northern coast.

BRITISH ISLANDS.

JAMAICA.

Jamaica is the third of the West India Islands in *size*, and has been rendered perhaps the most important by the industry and enterprise of the English.

The general *aspect* of the island, as of those before described, is very fine. The grand and lofty ridge of the Blue *Mountains* intersects it, and descends on each side into fertile plains, adorned with all the beauties of a tropical *landscape*. The variety of elevation permits the *cultivation* of European as well as tropical plants. The *products* of agriculture are very valuable, and are *exported* to the amount of 10,000,000 of dollars in a year.

SPANISH TOWN, or St. Jago de la Vega, situated near the southern coast, is the capital of the island, and the residence of the governor. *Kingston*, the commercial capital, is a city of some importance, in a healthy situation, and well built. *Port Royal* was formerly one of the richest towns in the West Indies; but it was destroyed three times successively, by an earthquake, a fire, and a hurricane, and is now important only as a naval station.

BAHAMA ISLANDS.

The *Bahama Isles* are a numerous group, extending about 700 miles, from south-east to north-west. A *large number* are mere rocks or sand banks, termed *keys*. Only a few are *inhabited*. The *climate* is fine, but the *soil* is scanty and barren. Many of them, particularly Turks Island, abound in natural *salt ponds*, in which large quantities of excellent salt are formed by the heat of the sun. Cotton and salt are the most important *products*. *New Providence* is the seat of government and contains half the population.

The *navigation* among these islands is so dangerous to vessels passing into the Gulf of Mexico, that a large class of the inhabitants are occupied entirely in looking out for wrecks, and bear the name of *wreckers*.

THE BERMUDAS, OR SOMERS ISLANDS.

These are usually classed among the West India Islands, although at some distance from the rest. The group is supposed to *contain* 400 islands. Many are very small, and they are generally mountainous and uncultivated, but abound with fine timber.

St. George is the largest, and contains the capital. The *climate* is salubrious and delightful, almost resembling a perpetual spring; and they are often resorted to for the recovery of health. The *inhabitants* are chiefly employed in ship-building and navigation.

CARIBBEE ISLES.

BRITISH ISLANDS.

TRINIDAD is the most southern of the West India Islands. Its *soil* is fertile, and its *surface* is not so much covered with mountains and rugged tracts as some of the neighboring islands. Only a small part of it is *cultivated*. *Port Spain* is the capital.

BARBADOES is the most eastern of the West India Islands. The *surface* is irregular and broken. The *soil* is fertile, although somewhat impaired by long cultivation. It is more generally cleared of *forests* than most of the other islands; and therefore enjoys a peculiar salubrity and coolness of *climate*, from the direct influence of the trade winds. *Bridgetown*, the capital, is a well built place.

ST. VINCENT is a small, elevated island, remarkable for its volcano, the Soufriere Mountain. ST. CHRISTOPHERS, or St. Kitts, has been much frequented by American vessels. The *soil* of the plains is remarkably productive. The remaining British Islands have no peculiarities which require description.

FRENCH ISLANDS.

MARTINIQUE is one of the largest of the Caribbee Islands, and superior in cultivation and produce to most others. It is also well adapted for trade, by the number and safety of its harbors. *St. Pierre*, the capital, is built in the style of old European cities, and resembles them in its conveniences and luxuries.

GUADALOUPE is also among the most important of the Caribbee Isles. It is *divided* into two parts by a shallow arm of the sea. The *soil* is rich and well watered. *Basse Terre*, the capital, is a well built town.

MARIE GALLANTE is a beautiful, but unhealthy island, only a small part of which is cultivated.

SWEDISH, DANISH, AND DUTCH ISLANDS.

ST. BARTHOLOMEW'S is the only possession of Sweden in the West Indies Its *shores* are rocky, and difficult of approach. Its *soil* is fertile; but it has no *water* except that of rains, which is preserved for drinking.

SANTA CRUZ, or St. Croix, is the principal Danish Island. It is *fertile*, and well *cultivated*. *Christianstadt*, the capital, is one of the handsomest towns in the West Indies. The other Danish islands, ST. THOMAS and ST. JOHN'S, are of little importance.

The *Dutch possess* three of the smallest of the Caribbee Isles ST. EUSTATIUS has but one landing place, and is strongly fortified. CURACOA is destitute of springs. ST. MARTIN'S is chiefly valuable for its salt pits The industry and enterprise of the Dutch have rendered these islands (in themselves almost worthless) a valuable source of *wealth*, as places of deposit and sale for European goods.

SOUTH AMERICA.

6,500,000 sq. m. 15,000,000 Inhab. 2 Inhab. to a sq. m.

SOUTH AMERICA has been already mentioned as possessing unusual grandeur in its natural features; and an account has been given of its physical divisions, surface and waters, which renders farther description unnecessary. (See page 68 to 72.) It is unrivalled for its richness in *mineral* treasures. (See page 155 to 158.) Its climates have all the diversity which elevation can give, in a region extending from the equator almost to the polar circles. (See ¶ 730, 733—5, 747.)

Its vegetable productions are distinguished for their number, value, and beauty; and among them are some of the most important medicinal articles, such as the Peruvian bark.

The population of South America consists chiefly of independent tribes of Indians in the interior, and of Europeans and their descendants on the coast; mingled with the Indians whom they have subdued, and negro slaves. The greater part of the territory was nominally divided between Spain and Portugal, and was settled from those countries. All these colonies have now established their independence. Brazil was settled by the Portuguese, and is now governed as an empire by one of the royal family of Portugal. The remainder of South America, except Guiana, is occupied by the Spanish colonies—La Plata, Chili, Peru, Upper Peru, and Colombia, which includes New-Grenada and Venezuela. Guiana is still a dependent country, divided between Great Britain, France, and the Netherlands.

The state of Learning, Education and Literary Institutions, will be found, ¶ 1049, 1078, 1099—of Agriculture, 1207—of Roads, 1218—of Cities, 1239—of Manufactures, 1242—1247—and of National Power, 1287.

COLOMBIA.

The late Republic of *Colombia is now divided* into three portions: It will be most convenient to describe it under the *natural divisions* of New-Grenada and Venezuela, which have always been retained in this work.

NEW-GRENADA.

700,000 sq. m. 2,000,000 Inhab. 3 Inhab. to a sq. m.

New-Grenada contains the loftiest *peaks* of the Andes. It is *traversed* by the three ridges of these mountains, which produce a variety of grand and beautiful *scenery*, not surpassed in any country. A *large part* of it consists in elevated, fertile plains, on which most of the inhabitants reside. The *eastern* part spreads out into the extensive llanos of the Orinoco.

The *climate* varies according to the elevation, and hence the vegetable *productions* are remarkably various and valuable. The *lower tracts* are excessively hot and unhealthy. The *isthmus* is peculiarly pestilential. The valleys and level tracts produce the most valuable tropical vegetables; while the table-lands *furnish the* grain and fruits of Europe. New-Grenada is also rich in *mines* of silver, gold and precious stones.

Manufactures are in a low state. The *commerce* is chiefly in the produce of mines, and tropical plants. Education was formerly neglected, but is now improving.

Santa Fe de Bogota, the metropolis, is situated on a plain, 8,000 feet above the sea, and thus enjoys perpetual spring. It is a well built town, containing a university.

Popayan is an old and respectable city in the vicinity of the mining region, elevated 5,000 feet above the sea. *Carthagena* is one of the principal seaports of New-Grenada, and has an extensive trade. *Panama* and *Porto Bello* are the seats of an important trade across the isthmus. Panama was noted for its pearl fishery.

EQUADOR, OR REPUBLIC OF THE EQUATOR.

That part of New-Grenada which lies south of the River Yupura, has been formed into an independent republic, under the name of Equador.

Quito, the capital, is situated only a few miles south of the equator; but from an elevation of 6,500 feet, it has a temperate and delightful climate. It is on the declivity of the volcano Pichinca, which is so steep that carriages cannot be used in its streets. It is traversed in some parts by deep chasms or crevices, and is peculiarly subject to earthquakes. *Guayaquil* is also a commercial place, and a very handsome town. All the seaports of New-Grenada and Equador have a low situation, and a very unhealthy climate.

VENEZUELA, OR CARACCAS.

500,000 sq. m. 1,000,000 Inhab. 2 Inhab. to a sq. m.

The *northern part* of Venezuela is traversed by a branch of the Andes, which extends along the coast to the island of Trinidad, and gives it a great inequality

of surface. The *southern portions*, which form the basin of the Orinoco, spread into the vast plains or llanos, which have been already described.

The *soil* of this country is generally rich, especially in the basin of the Orinoco. Its *temperature*, like that of New-Grenada, varies with the elevation, from extreme heat to extreme cold; but the greater part has a fine and temperate *climate*. The *productions* are equally various and rich.

There are no *mines* of consequence to divert the inhabitants from *agriculture*, which is therefore in a better state than in other parts of South America. Still there is a great want of *industry* and *enterprise*, in improving the natural advantages of this fine country. *Most attention is paid* to the raising of cattle and the cultivation of cacao. These, and the usual productions of the Torrid Zone, furnish articles of *export*. One-fifth of the *inhabitants* only are whites.

CARACCAS, the metropolis of this country, is situated in a valley, 2,900 feet above the sea. It is extremely subject to earthquakes, by one of which it was nearly destroyed in 1812. *La Guira*, its seaport, is on the coast, seven miles from the city. It has not a good harbor; but its *commerce* is important.

Porto Cavello, on the west of La Guira, is a port of considerable trade. *Cumana* is one of the principal towns of Venezuela, with a healthy climate, but subject to earthquakes. Its inhabitants are chiefly engaged in commerce or fisheries. *Barcelona* is chiefly a place of trade. *Angostura*, on the Orinoco, is also a place of some commerce.

GUIANA.

250,000 Inhab.

This name is applied to the whole tract lying between the Orinoco, the Cassiquiari, and the Amazon, which is in fact a vast island, enclosed by these rivers and the ocean. It is *divided* into the Spanish territories on the north; the Brazilian on the south; and the French, Dutch, and English, on the coast. A range of mountains separates the Portuguese or Brazilian possessions from the rest.

This country has been but partially *explored*, and most of the *settlements* are on the coasts, or the banks of the rivers. The *greater part* is occupied by the Indians, some of whom feed on human flesh. The *coast* is low and flat. The *interior* rises sometimes into mountains, and sometimes spreads into vast plains. It is generally *level* and *fertile*. The *climate* is hot, moist, and unhealthy. The vegetable *productions* are peculiarly delicious and luxuriant.

The *Spanish and Portuguese territories* are chiefly unsettled. The *British and Dutch colonies*, on the Essequebo, Demarara, Berbice, and Surinam Rivers, form an extensive plain, covered with flourishing plantations, between the sea and the forests. They are divided by numerous canals and dikes, and well cultivated. *Surinam* is the only division which now belongs to the Dutch. *French Guiana* is less improved in its condition.

Cayenne, the capital of French Guiana, has a large convenient port, and is noted for the pepper which bears its name. *Paramaribo* was the capital of the Dutch colonies on the Surinam River, about twenty miles from the sea. It is well built, and has a fine road for ships.

New-Amsterdam is the chief town in Berbice, intersected, like the Dutch towns in Europe, by canals. *Stabroek* is the principal town of Demarara, and the centre of commerce for this part of Guiana.

BRAZIL.

2,500,000 sq. ms. 5,000,000 Inhab. 2 Inhab. to a sq. m.

Brazil is equal in *extent* to the whole territory of the United States, and occupies about one third of South America. The *coast* is settled by Europeans; but the *interior* is a vast forest, of which only a small part has been explored.

The *soil* is generally well watered and fertile, and the aspect of the country is beautiful. The *climate* varies from the Equatorial to the Temperate. The *interior* enjoys the peculiar advantages of an elevated tract in a warm climate. The *productions*, both of the Torrid and Temperate Zones, flourish in the latitudes and elevation adapted to them. Brazil is rich in *mineral treasures*, supplying a large part of the diamonds of commerce, besides other precious stones, and the precious metals, to a great amount. There is not probably any country in the world which enjoys greater *natural advantages*, in the excellence of its soil and

climate, the luxuriance and variety of its vegetable productions, and the value of its minerals. Yet in consequence of the character of its inhabitants, it is far behind most civilized countries in *improvements*, *wealth*, and *power*.

The *people* are excessively indolent, and the state of education is very low. The *passion* for mining, and for the rapid acquisition of wealth, leads to the neglect of every species of industry. Almost all the *labor* is performed by negroes. *Agriculture* is wretched, and manufactures scarcely exist. *Commerce* is carried on under every disadvantage, from the want of enterprise, and the oppressive restrictions of the late government, which monopolized some of the most important branches. The *roads*, the *cities*, the houses, the food, and the *manner of living* in Brazil, are all marked with the effects of indolence and carelessness, which deprive the people of many of the comforts enjoyed in less favored countries.

Rio Janeiro is the most important, populous, and commercial city. It is situated on a narrow strip of land, between the sea and the mountains. Its harbor is one of the finest in the world. It has an extensive foreign commerce, and is also the great mart of the interior. It is said to be centuries behind the European capitals in the comforts of civilized life. *Bahia*, or *St. Salvador*, is the second city of Brazil in size and commercial importance. It is divided, like Quebec, into a lower and upper town; and the streets have so steep an ascent, as to prevent the use of carriages.

Pernambuco is a populous and commercial town, sometimes considered as including the town of *Olinda*, not far distant. It is divided into three portions by the river on which it stands. One of these divisions, called *Recife*, is the seat of trade. The harbor is protected by a singular reef of rocks, resembling a work of art, with a narrow passage, which admits only one vessel at a time. *Porto Seguro* is a considerable town on the coast.

St. Paul's is one of the most noted towns of the interior, and a place of some refinement. *Villa Rica* is the capital of Minas Geraes, and the centre of a mining district formerly very important. *Tejuco* is the capital of the diamond district. *Villa Boa*, near the centre of Brazil, is a populous and flourishing mining town.

PERU.

480,000 sq. ms. 1,500,000 Inhab. 3 Inhab. to a sq. m.

Peru is a long, narrow tract, lying on both sides of the Andes. It is *divided* into High and Low Peru. *Low Peru* is an inclined plane, from ten to twenty leagues broad, extending from the ocean to the first chain of the Andes, or the Cordilleras of the coast. Its *climate* is excessively hot and its *soil* sterile, in consequence of the entire want of rain; and *deserts* of thirty or forty leagues in length, are frequent on the coast. *High Peru* lies between the two principal ridges of the Andes, considerably elevated above the sea. Its *climate* is therefore excellent. The *surface* is various, but the *soil* is generally fertile. On the *eastern declivity of the Andes*, the country gradually descends into the extensive, grassy plains of Brazil and Venezuela.

The *vegetable products* of Peru, comprise those of tropical and temperate climates. The Peruvian bark is peculiar and highly valuable. The mountainous districts, which are too sterile for cultivation, abound in *mines* of gold, silver, and mercury; but some of the most valuable formerly included in Peru, now belong to Bolivia.

Peru is thinly *populated*, and there is a total want of good *roads*, *bridges*, and *canals*, to facilitate transportation. *Industry* is discouraged for want of an opportunity of carrying its products to a market, as well as by causes common to other parts of South America. *Agriculture* is much neglected; and this fertile country is entirely dependent on others for its supplies of *bread*. *Manufactures* are in no better state. So many valuable articles of export are produced, that its *commerce* is still very important. This is chiefly with La Plata, and is *carried on* over the Andes.

Lima is the metropolis of Peru, and is one of the most wealthy and commercial cities in South America. It is distinguished for the magnificence of its public buildings, the luxury and ostentation of its people, and the rich ornaments of silver, gold, and precious stones, with which its churches are filled. It has a

university, and there is a taste for literature among many of the inhabitants. *Callao*, about six miles distant, is its port, and one of the best in South America.

Cuzco, the ancient capital of the Peruvian empire, is situated in the interior, in a province of this name. It has many fine buildings, and retains something of its former magnificence. *Arequipa* is one of the largest and best built cities of Peru, situated on an elevated plain. *Aranta*, its port, has a good harbor, but difficult of access. *Guamanga* is well built, and has a university. *Tarma and Truxillo* are small towns, the capitals of the two provinces of the same name, north of Lima. *Guanca-Velica* is the most elevated city on the globe, nearly three miles above the level of the sea. It is celebrated for its mines of mercury, gold and silver.

CHILI.

170,000 sq. ms. 1,100,000 Inhab. 6 Inhab. to a sq. m.

Chili is a narrow tract lying chiefly on the declivity of the Andes, and extending about 1,200 miles in length, between the sea and the mountains. Only eight or nine narrow *passes* exist through this barrier, which divides it from the rest of South America; and the *passage over the Desert* of Atacama on the north is almost equally difficult. It is *watered* by 120 rivers, all of which have a short course and rapid current; but several are *navigable* half their length by ships of the line. It is commonly *divided* into two portions, the maritime and the midland country. The *maritime country* is intersected by three chains of mountains, parallel to the Andes. The *midland country* is an elevated plain.

The *climate* is remarkably fine and salubrious. In the *northern provinces* it rarely rains, and thunder is scarcely known in any part of the country. The *dews* are abundant. *Volcanoes* are numerous among the Andes, and *earthquakes* occur several times a year.

The *soil* is very fertile, particularly in the valleys of the Andes, and produces the *vegetables* of Europe, as well as many peculiar to this country, in profusion—such as the finest grain, vines, and olives, oranges, lemons, &c. Whole forests of apple, peach, and pear *trees* are found in the southern provinces. The portion of Chili, *south of Conception*, is possessed by independent tribes of Indians, with the exception of the fortress of Valdivia.

The *Chilese* are intelligent, hospitable and humane. They appear to be superior in *industry* to most other inhabitants of South America. There is little *education*, and before the revolution there was no printing press in the country. *Agriculture* is conducted with all the skill necessary in this productive region, and its fruits are very abundant. The chief labor required is in *irrigation*. *Manufactures* and mechanic *arts* are in a low state. The products of agriculture and mines are *exported* to a considerable amount; and Chili almost supplies Peru with wheat.

Santiago, or St. Jago, the capital, is finely situated near the mining region, and is the emporium of the commerce of Chili. *Valparaiso* is the port of Santiago. It has an excellent harbor and a considerable amount of commerce.

Conception is the third city of Chili, and is considered the metropolis of the southern part. *Talcahuano*, its port, is six miles distant, and has a fine harbor. *Coquimbo and Copiapo* have good harbors. *Valdivia* has one of the finest on the coast; but it has no cultivated country around it to give it importance. The city is five miles from the sea, on a river of the same name.

Chiloe, and the adjacent isles, are inhabited by the Chilotes, a very ingenious race of Indians subdued by the Spaniards.

The island of *Juan Fernandes*, off this coast, was the residence of Alexander Selkirk, whose story gave rise to the romance of "Robinson Crusoe."

THE UNITED PROVINCES OF LA PLATA, OR BUENOS AYRES.

1,500,000 sq. m. 2,500,000 Inhab. 2 Inhab. to a sq. m.

The United Provinces of La Plata are *composed* of a number of States, whose boundaries are not well defined or settled.

The *southern part* of La Plata lies in the basin of the Paraguay, and spreads out into an immense plain, between that river and the Andes of Chili. The uninhabited *pampas*, already described, extend into Patagonia on the south to an unknown distance, presenting a vast expanse of waving grass, and affording pasture

to innumerable herds of cattle. The *hills* which occasionally occur, seldom rise more than 500 feet. *Lakes* are numerous. The *northern districts* are rough, mountainous, and barren, but rich in mineral treasures.

The *climate* of this extensive region is varied by the latitude, but still more by the situation of the ground. The *plains* are excessively hot in summer. The *coast* has a temperate climate, and water freezes but slightly in the winter. The *elevated tracts* have the customary varieties of temperature. The *productions* vary with the climate, including those of the Temperate and Torrid Zones.

The *people* of La Plata, like those of other parts of South America, are little cultivated in any respect. *Agriculture* is scarcely attended to. *Manufactures* are in a low state. The cattle of the pampas, and the mines of the upper provinces, furnish the chief articles of *export;* and *commerce* is now free from the restrictions formerly imposed.

The *government* of these provinces does not appear to be fully settled, nor the union completed. Great efforts are now made in Buenos Ayres for the introduction of *knowledge* and *arts*. Such was the state of the country *formerly*, that a person educated at one of their colleges never saw a printing press, until he visited Buenos Ayres after the revolution. With the greatest exertion, it must be long in arriving at the state of improvement common to European countries.

Buenos Ayres is the chief city, and centre of trade, of the southern part of South America. It is well built and fortified, and is increasing in wealth and population. The River La Plata is here thirty miles wide, but it does not form a safe harbor, on account of the storms which frequently occur. *Cordova* is a mart for the trade of the interior.

MONTE VIDEO.

220,000 sq. ms. 175,000 Inhab.

Monte Video is a republic formed of the district called the Banda Oriental, formerly a part of La Plata, which lies around the city of Monte Video. This country has a mild and agreeable *climate*, and produces an abundance of fine fruit. Its *soil* is fertile, but poorly cultivated. Its *commerce* is considerable.

Monte Video, the capital, is situated on a peninsula on the northern shore of the River La Plata, 120 miles from Buenos Ayres. Its harbor is the best in the river, and its trade important. *Maldonado* is a fortified town, respectable for its commerce. *Florida* and *Colonia*, or *San Sacramento*, are of less importance.

PARAGUAY.

150,000 sq. ms. 600,000 Inhab. 4 Inhab. to a sq. m.

Paraguay was a province of the viceroyalty of La Plata, but is not connected with the new republic. It is an independent community, *composed* chiefly of civilized Indians, under the *direction* of a European chief, who exercises absolute authority. *Strangers* are not allowed to visit it, and our *knowledge* of its present state is very imperfect.

It is a *level* region, extremely well *watered*, and *fertilized* to a great extent by annual inundations. Its *climate* is generally moist and temperate. Its vegetable *productions* are varied and valuable, and it is remarkable for the *matte*, a plant which is used like tea among the Chinese, and which is exported in large quantities to all the surrounding countries. Its *trade* in this and other productions is important.—Assumption is the capital of Paraguay.

BOLIVIA, OR UPPER PERU.

320,000 sq. ms. 1,200,000 Inhab. 4 Inhab. to a sq. m.

The new republic of *Bolivia embraces* the provinces which were formerly called Upper Peru. It is an *elevated* region, surrounded by the Andes and their branches, and the Brazilian mountains, giving rise to numerous and large streams. Its *surface* is extremely rugged and mountainous, and in some parts desert. Its *climate* is generally cold on account of the elevation, and its vegetable *productions* few and scanty. Still there are some districts which are *level* and *fertile;* and some which are even so hot as to produce cotton.

The chief *wealth* of this country consists in its mines of silver and gold, which have long been celebrated as the richest in the world. Its *commerce* in the pre-

cious metals is immensely valuable; and supplies the inhabitants with all the luxuries of other countries. It is also the centre of trade between La Plata and the western coast.

Potosi is situated in a cold and sterile region, but its mines give it immense wealth and importance. It is divided into the city, and the Ingenios, or laboratories of the mines. It is the centre of all the commerce between Buenos Ayres and the interior provinces, and is immensely rich in gold and silver. Its luxury and dissipation are proportioned to its wealth. *Charcas*, or *La Plata*, is a neat city in a fine climate. It has a university, two colleges, and a law school. *La Paz* is a well-built city, in a fertile but cold region. It is remarkable for an *almshouse*, said to be the only institution of the kind in South America.

INDEPENDENT TRIBES OF SOUTH AMERICA.

The Native Tribes of South America are accustomed to *gain their subsistence* by cultivation; and the luxuriance of vegetation in the Torrid Zone, renders a small spot of ground sufficient to supply the wants of a tribe. Hence they were always more *numerous* than the Indians of the United States territory; and they have not been diminished or driven away, as the North American Indians have been by the cultivation and settlement of their hunting grounds.

The independent tribes *occupy* the southern projection of South America, usually called Patagonia; and the central regions, termed Amazonia.

PATAGONIA.

Patagonia extends from the pampas of La Plata, to Cape Horn. It has never been fully explored or described. Its *surface* is varied by the Andes, which pass through it, and descends gradually to the level of the pampas on the north. It has the *climate* and *productions* of Buenos Ayres in the *northern parts;* but the *southern* appear to have all the inclemency and sterility of the Frozen Regions.

Patagonia is *inhabited* by two principal nations of Indians, each divided into several tribes. The *Puelches* occupy the Atlantic coast, and extend for some distance into the interior. The *Moluches* are in the western section, extending across the Andes to the Pacific Ocean. Some of the tribes, especially those on the Straits of Magellan, are remarkable for their *stature*, and generally measure six feet and a half in height. None of these Indians have been *civilized*. They have learned the use of *horses* from the Spaniards, and sometimes rob the caravans on the pampas. They exhibit a warlike and ferocious *spirit*.

The Araucanians of Chili are the most powerful and warlike of all the Indian nations in the southern part of the continent, *resembling* the North American Indians in their character, and particularly in their fondness for eloquence. They are more *intelligent* and *cultivated* than any existing tribe of natives.

They have maintained their *independence*, by a series of bloody wars for two centuries, although surrounded by the Spaniards of Chili; and their *ambassadors* are now received as residents at the Chilese capital. They have acquired many of the *arts* necessary to subsistence, and exhibit a degree of *literary taste* which is scarcely found in any other natives. They are *divided* into several tribes governed by hereditary chiefs, who are all subject to a General elected for the purpose, in time of war. Their *government* seems to be administered as regularly as in civilized nations.

The Abipones are an independent nation residing on the banks of the River La Plata. They have a bold and warlike *disposition;* but they are much less *cultivated* and interesting than the Araucanians.

AMAZONIA.

Amazonia, although not a political, or even a natural division of South America, is a convenient term to designate the vast wilderness which forms the interior of Brazil, Peru, Guiana, and Colombia, lying on the Amazon and Orinoco Rivers. It is nominally included in these *governments*, but is really controlled by numberless tribes of Indians, whose character is scarcely known, and whose territory is almost unexplored. The *climate* and *aspect* of the country, so far as examined, resembles that of the surrounding regions

Some of the natives are very ferocious; and there are tribes bordering on the European settlements, who watch and hunt for the whites and negroes in order to feast upon their flesh. *Others* exhibit a mild, inoffensive character. The *Otomacs*, and some other tribes on the Orinoco, are in the habit of swallowing balls of clay to appease their hunger, when other food is scarce; and they always lay up a store of these for the season of floods, when they cannot procure fish.* The *Guarones* are a social, hospitable tribe, who inhabit the islands in the delta of the Orinoco, and act as pilots. During floods, they *lodge* in dwellings suspended from the trees.

Guiana is chiefly occupied by the powerful and hostile nations of the Caribbees, and Arouacs, or Arowauks. The *Caribbees* are distinguished for pride, independence, and ferocity of spirit, and are superior to most tribes around them, in arts and war. The Caribbee Islands were probably peopled by this nation, and the other West India Islands, by the Arowauks. The *Arowauks* are mild and gentle in their disposition, and have been continually subject to attack and oppression from the Caribbees.

A large number of Indians in South America are in a state resembling slavery, in the European colonies; and have all the degradation and vice belonging to slavery. A considerable number are also collected in distinct communities, termed Missions, subject to the government of the whites. The latter bear the name of *civilized Indians;* and they possess more skill in agriculture and arts, and more attachment to a settled life than the independent tribes. But Humboldt observes, that they should more properly be termed *subdued Indians;* that they are often as destitute of Christian knowledge and morality as the free tribes, and only substitute the stupid indolence and other vices of slaves, for those of savages The Indians in the province of *Paraguay*, lying east of the river Paraguay, were instructed and civilized by the Jesuits with great care; and were long governed by them. They now hold a respectable rank as an independent community, both in wealth and power.

ISLANDS OF SOUTH AMERICA.

Terra del Fuego is a dreary island, crossed by a chain of rocky mountains, covered with snow. Its climate is intensely cold. Its inhabitants at the south, are ferocious; at the north, mild.

The *Falkland Islands* are equally sterile and cold.

South Georgia, Sandwich Land, and the newly discovered *South Shetland Isles*, are barren rocks, covered with perpetual snow. These islands are inhabited only by sea fowls and seals, and are resorted to for the purpose of killing seals, and procuring their skins. (*See* ¶ 542.).

EUROPE.

3,800,000 sq. ms. 230,000,000 Inhab. 60 Inhab. to a sq. m.

EUROPE is the smallest of the great divisions of the world, and least distinguished for the grandeur of its natural features; but in science, arts, and improvements it surpasses all the rest. In modern times, it has been the central point from which civilization and knowledge have extended to other nations, and its emigrants have peopled all the civilized countries of the globe.

A full account of its natural divisions, surface, and waters will be found, page 93 to 104. It extends from the Frozen to the Tropical Regions, and has a corresponding diversity of climates and productions. (*See page* 137, 140, 142, 143—4, *and articles on vegetables and animals.*) It comprises numerous and valuable mines, and furnishes almost every useful mineral. The Government and Religion of its respective portions, will be found under those heads, and on the Chart of the Inhabited World. The state of Learning is described page 198—200—of Instruction, page 203—5; and of Literary Institutions, page 207—9. An account of

* Humboldt.

Agriculture is given page 226—232—of Roads, page 237—8—of Cities, page 240—and of the comparative power of its nations, page 258.

RUSSIAN EMPIRE.

The Russian Empire *comprises* Russia in Europe, the kingdom of Poland, Siberia, and the Caucasus. It also stretches across to the continent of America, *reaching* more than half round the globe. It covers nearly half the *surface* of Europe and Asia, and comprehends one ninth of the inhabited world.

RUSSIA IN EUROPE.

2,000,000 sq. ms. 58,000,000 Inhab. 29 Inhab. to a sq. m.

Russia occupies the eastern half of Europe, from the northern to the southern extremity. It is generally a level country, and its distinguishing *features* are vast plains and majestic rivers. The Valdai *hills*, south of Petersburg, only 1200 feet above the level of the ocean, are the highest ground between Finland and the Black Sea. Forests, morasses, and salt plains, cover *vast tracts* of this empire. Other portions are *fertile*, and abound with excellent pastures. The *forests* are more extensive than in any other part of Europe.

It is composed of two great *declivities*—one descending towards the Frozen Ocean—and the other towards the Black and Caspian Seas. The northern declivity belongs to the Frozen Regions; the southern extends to the Cold, Temperate, and Warm Regions. The *cold of winter* is greater than in the West of Europe, and the *heat of summer* also more intense.

This country contains *inhabitants* of many different nations and languages, of all religions, and in every stage of civilization. There were *formerly* but two *classes* in Russia—luxurious and ignorant nobles—and their enslaved peasants. The Russian peasants, or '*boors*,' are rude in their manners, filthy in their habits, and almost barbarians in the state of their knowledge. They have great skill in imitation, but little invention. Of late years, a *middle class* of mechanics and manufacturers has arisen in the large towns, consisting of foreigners and emancipated boors. *Manufactures* are in a low state, and are chiefly carried on in families; but duck and other cloths of hemp, and leather, are manufactured to a considerable amount. *Agriculture* is impracticable in the northern parts of Russia, on account of the climate, and every where imperfect. The raising of cattle is the *principal employment* of the people. The chief *exports* are tallow, hides, leather, iron, and hemp.

Moscow was the ancient capital, and the seat of immense trade from all parts of the empire, a well as from the various nations of Tartary and Turkey. It was burned in 1812, but has been in a great measure rebuilt.

PETERSBURG, the modern capital, was built by Peter the Great, on a spot at that time a marsh. *Cronstadt*, on an island at no great distance from it, is its port, and the station of the royal navy. It is the chief place of foreign commerce for the empire, and the seat of its principal scientific and literary institutions, arsenals, and other public establishments.

Riga is next to Petersburg in commerce. Its harbor admits ships of large burden to the walls of the town. *Archangel* is the most northern port of any consequence in Europe, and was the principal one in Russia, before the foundation of Petersburg. It still carries on considerable trade during the summer; but its harbor is frozen during a large part of the year.

Nicholaef is the chief town in the southern part of Russia, almost surrounded by the River Bog. It is the naval station for the Black Sea, and has extensive arsenals, and other naval establishments. It is inferior to no city in the empire, except Petersburg and Moscow. *Odessa* is one of the best harbors and most frequented ports in the Black Sea. *Cherson* has declined in prosperity.

Abo is the capital of Finland, and the seat of a university. *Novgorod* is only remarkable as one of the ancient capitals of the sovereigns of Russia. Some remains of former grandeur are still visible. *Kiev* was the cradle of the Russian sovereignty. It is remarkable for its catacombs, which are visited by pilgrims from all parts of the empire. *Tula* is the capital of a province of the same name, and the seat of extensive iron works. *Tver* is the centre of the extensive inland navigation, carried on by means of the Volga, and its branches and canals.

Smolensko was a large town, nearly destroyed by the French in their invasion of Russia.

Tcherchaskoy, on the River Don, is the capital of the Don-Cossacks. It is built like Venice in the midst of the water, and traversed by canals.

POLAND.

48,000 sq. ms. 4,000,000 Inhab. 83 Inhab. to a sq. m.

A small remnant of the former kingdom of Poland now *forms* a distinct state subject to the emperor of Russia. Its *surface* is generally level, and extensive marshes are numerous. Its *soil* is fertile, but much of it is best adapted to grazing. Its *climate* is cold and moist.

The *people* are ignorant, and rude in their manners. The *peasants* are in a state of wretched poverty and vassalage. The *nobles* are haughty and oppressive. *Agriculture* is miserably conducted; yet considerable quantities of grain are produced for *exportation*, and cattle are also reared for this purpose. *Manufactures* are in a low state. *Commerce* is carried on chiefly by foreigners.

Poland has few towns of importance. WARSAW is the capital, but is destitute of every other distinction among the cities of Europe. *Cracow*, the ancient capital, is now a free town, endowed with commercial privileges. Not far from it, in the Austrian territory, are the salt mines of *Wielitzska*. *Lublin* is one of the largest commercial towns in the south-east of Poland, and is noted for three annual fairs, each continuing a month, to which Europeans, Turks, and Arabs resort.

RUSSIA IN ASIA, OR SIBERIA.

5,500,000 sq. ms. 3,500,000 Inhab.

The *climate* and *general character* of Northern Russia, extends into its Asiatic dominions. Siberia is *proverbial* for its intense cold, and sterile soil. It is *enclosed* by chains of mountains on three sides—the Ural on the west, the Altaian on the south, and the branch called the Daourian, Yablonoy, and Stanovoy on the east. Its *surface* is chiefly composed of vast plains, or steppes, which were described ¶ 611. The peninsula of *Kamschatka* is traversed by a chain of mountains through its whole length, whose summits are covered with perpetual snow. Many of them are the seats of *volcanic fires*.

The general *climate* is that of the Frozen Regions—long winters of intense cold and short summers of great heat are the only divisions of the seasons. The northern regions admit of no *cultivation;* the middle of very little; but some districts in the south are capable of producing grain.

Wild *animals* are numerous, and the rivers abound with *fish*. From these the inhabitants derive their *chief support*. The *furs* form an important article of export. The rich *mines* of the Altaian Mountains furnish large quantities of various metals to European Russia, and form an important part of the resources of the empire.

Siberia is *inhabited* by barbarous and savage tribes, who make no effort for improvement. *The most advanced* in civilization are only employed in feeding reindeer or cattle. The Russian government has made this country a place of banishment for state *criminals*. In this way, and by the emigration of a few colonists, some *towns* have been settled, and have made considerable advances in agricultural and mechanical *improvements*. The actual power of Russia over many of the Siberian tribes is small; but some of them furnish large numbers of soldiers to the army in war.

The *Cossacks*, so celebrated for conduct and prowess in the late wars of Europe, were originally Poles, who settled in Russia, and now have an independent, military government. They have some *education* among them. They *reside* chiefly in the steppes of the Don and the Volga. The *Calmucks*, who live between the Volga and the Caspian, are also considerably advanced beyond other barbarous nations of Siberia in arts, and possess large flocks and herds. The *Yakuts* and *Tunguses* are less improved. The *Tschukkis* and *Samoiedes* are in the lowest state of society, and have much resemblance to the Esquimaux of North America and Greenland.

Astrachan is the port of Russia for the Caspian Sea, and a place of considerable manufactures. It has immediate communication with Petersburg by the Volga and its canals. It is also the great emporium of trade for the produce of Asia, and has an assemblage of merchants from most countries between the Mediterranean and the Ganges.

Tobolsk is the metropolis of Western Siberia. One fourth of its inhabitants are Tartars. It is a great thoroughfare for caravans engaged in the trade to the east, and to China, but is not a place of much commerce. *Irkutsk* is the principal town in Eastern Siberia, and indeed the capital of the whole. It is a splendid, prosperous city, possessing an extensive trade, and many of the luxuries and amusements of Europe. It is the general place of deposit of furs, from America and Eastern Asia, and for the merchandise of the Chinese and American trade. *Kiachta*, or *Kiakta*, on the River Selinga, is the seat of the trade between China and Russia, and is inhabited by numerous mercantile agents. The great fair is held in December. *Okotsk* is the chief port of Eastern Siberia, and the channel of intercourse with Kamschatka and America. *Yakutsk* is the most northern town of Eastern Siberia. In the south-western part of Siberia—*Orenburg* on the River Ural, is the place of trade with Central Asia; *Uralsk* is the capital of the Ural Cossacks; *Derbend* is a fortified port on the Caspian Sea, with a limited trade.

The Russian settlements have been extended from Asia across Beering's Straits; and the emperor lays claim to the North Western Coast of America, as low as the 52d degree of latitude. On examining the whole of the Russian dominions, we find an empire stretching through 200 degrees of longitude, over three of the quarters of the globe, covering a territory twice as large as the whole of Europe, and embracing 80 different nations. But its population is not dense, and its wealth is perhaps less than that of some other countries. Its military force is larger than that of any other power in Europe. Its navy, both in the Baltic and Black Seas, is respectable, and it ranks among the first of European states in power and influence.

THE CAUCASUS.

CIRCASSIA—GEORGIA—MINGRELIA.

The district of country lying between the Black and Caspian Seas, along the borders of the Caucasus, is *inhabited* by a number of distinct nations, most of whom are tributary, or allied to the Russians. It consists of vast ranges of mountains, with rough, steep ridges, and narrow, fertile valleys, and is nowhere level.

The CIRCASSIANS inhabit the northern side of the Caucasus. They are a barbarous people, *divided* into a number of tribes, under petty princes; and are little more than lawless hordes of robbers.

The GEORGIANS are a more interesting people, on the southern side of the Caucasus. They are civil and friendly in their *manners*, but fickle and turbulent.

These nations are *remarkable* for the beauty of their females, numbers of whom are sold as slaves to the Turks and Persians. They are in the feudal state as to *government*. Their *religion* is a mixture of the Mahometan and Christian; but there is scarcely a vestige of pure Christianity.

TEFLIS is the principal town of Georgia, remarkable for its warm baths. It is poor and mean in its appearance.

MINGRELIA is a plain on the borders of the Black Sea, which is well watered and fertile. Its people resemble those of Georgia.

SWEDEN.

180,000 sq. ms. 2,500,000 Inhab. 14 Inhab. to a sq. m.

Sweden is remarkably *diversified* with extensive lakes, numerous rivers, stupendous rocks and verdant valleys. The *greater part of it is covered* with forests, interspersed with small, well cultivated farms, and resembling many parts of the United States in the aspect of its *scenery*. It is rugged and mountainous in the *western* part, but level on the *shores* of the Baltic. Hardly one-thirtieth part of the *soil* is capable of cultivation.

The cold of winter is severe: but the *climate* is less variable, and the *air* more clear and healthful, than in many warmer countries. The *government* is free from oppression; the means of *instruction* are abundant; and the *people*, generally intelligent and well educated. The *higher classes* of Swedes are ostentatious and luxurious, but brave, hospitable, and very sprightly. *The peasants*, especially in the interior, are simple and kind in their manners, and strictly honest in their habits.

The *agriculture* of Sweden is well conducted, but does not supply its wants. *Manufactures* are insufficient for domestic consumption. It has 2,400 miles of *seacoast*, and commands one shore of the entrance to the Baltic. Its *commerce* and *fisheries* are extensive and important. Its chief wealth is derived from its *mines*, which produce iron and copper of a superior quality. *Norway* is under the government of the king of Sweden, who also possesses several islands in the Baltic, and the island of St. Bartholomew in the West Indies.

STOCKHOLM, the capital, is situated on several small islands and peninsulas, near the entrance of the Lake Maler into the Baltic. It has a safe and commodious harbor, and extensive trade. *Gottenburg* is the second town in Sweden in commerce and population. It will soon be connected by a canal with Stockholm and the Gulf of Bothnia.

Carlscrona is a seaport of considerable trade, and the principal station of the Swedish navy. *Fahlun* is celebrated for its copper mines, and *Dannemora* for the principal iron mine of Sweden. *Upsal* and *Lund* contain the two Swedish universities, of which Upsal is the most celebrated. *Norkoping* and *Gefle* are places of considerable trade.

NORWAY.

120,000 sq. ms. 1,100,000 Inhab. 9 Inhab. to a sq. m.

The *surface* of Norway is very uneven, presenting a succession of mountains and valleys. A rugged chain of mountains separates it from Sweden, and a range of rocky islands lines the seacoast. The *scenery* is more diversified than that of Sweden, with rocks, precipices, and cataracts. The rivers are of little use for *navigation* on account of their numerous falls. *In the interior, the climate* is intensely cold, but the air is serene and healthful; and the people live to an advanced age. *On the seacoast*, the climate is moist, and milder than in the interior of Germany.

The *Norwegians* are simple, hospitable, and industrious; and remarkable for an independent spirit. They are well instructed in the common branches of education. Most of the peasants *manufacture* their own clothing, tools, and furniture.

Not more than one hundredth part of this country is capable of *cultivation*, and most of the grain is imported. The valleys afford excellent pasturage, and feed numbers of cattle for exportation. The principal *wealth* of Norway is derived from the produce of its fisheries, the timber of its forests, and the silver, iron, and copper of its mines, which are exported in considerable quantities.

BERGEN is the most populous and commercial town, and has been generally considered the capital. *Christiania* is superior in its character and influence, and is the residence of the public authorities. *Drontheim*, the ancient capital, is the most northern city in Europe, except Tornea, and a place of considerable trade. *Kongsberg* is a small city, entirely supported by the silver mines in its vicinity. *Fredericshall*, a small town on the borders of Sweden, is celebrated for many sieges, in one of which Charles XII. was killed.

LAPLAND.

Lapland occupies the northern extremity of Europe. Although *divided* among different governments, it is considered as one country on account of the uniform and peculiar character of the people. North Lapland belongs to Norway; South Lapland to Sweden; and East Lapland to Russia.

The country along the Gulf of Bothnia is an immense plain, covered with forests of spruce and fir. The land gradually rises into a central ridge of high mountains, and thence declining towards the North Cape. The winters are long, and intensely cold; and the sun does not appear for several weeks. The *climate* of the seacoast is more temperate. The summers are short, but the perpetual day produces intense heat.

Vegetation is scanty, and grain is cultivated with great difficulty. Herds of reindeer form the *chief support* of the people, supplying them with food and clothing, and serving also as beasts of burden.

The *Laplanders* are a dwarfish and barbarous people, with little knowledge, and few arts. They profess Christianity; but are very ignorant of the Scriptures, and retain many Pagan superstitions. The *mountaineers* lead a wandering life; and those on the seacoast change their habitations twice in a year.

During the winter, the Laplanders carry on some *traffic* with the Swedes, at Tornea and other towns on the Gulf of Bothnia, and exchange the produce of their herds and fisheries for other necessaries of life.

DENMARK.

22,000 sq. ms. 2,000,000 Inhab. 91 Inhab. to a sq. m.

The kingdom of Denmark comprises the peninsula of Jutland, together with Zealand, Funen, and the other islands lying in the Categate Sound, and the Duchies of Holstein, and Lauenburg, extending from the Eyder to the Elbe. The free cities of Hamburg and Lubec, lie within its limits, but are not subject to its power.

Continental Denmark forms a long, continued plain, interrupted by few hills or rising grounds. The small *River* Eyder is the only one of importance, but lakes, rivulets, and brooks are numerous. The *soil* of this kingdom is generally fertile, and peculiarly adapted to pasturage. The southern parts are well *cultivated*, producing grain, fruits, and all the necessaries of life, in abundance. The *atmosphere* during a greater part of the year is thick and cloudy. The *climate* is more temperate than is usual in this latitude; and although moist, is generally healthy.

The *Danes* are an honest, industrious people, well educated, but not remarkable for enterprise or improvement. *Manufactures* are so little advanced among them, that many articles are imported, and for want of forests, they obtain their timber from other countries. Denmark is favorably situated for *commerce*. Its trade extends to the Mediterranean and the East and West Indies. Some ships are sent to the Indian and Pacific Oceans to engage in the whale fishery, and many small vessels are employed in the herring fishery, on the north-west coast of Europe. The principal *exports* are the produce of these fisheries, and great numbers of horses and cattle.

Denmark is a feeble state, and the principal source of its *power* lies in the command of the entrance into the Baltic. It levies a toll upon all ships that pass the Sound, which is generally paid at Elsinore.

COPENHAGEN, the capital and residence of the king, is situated on a fine harbor, on the eastern coast of the island of Zealand. *Altona*, on the Elbe, is the next city in population and commerce.

Elsinore has an excellent road, generally crowded with vessels of various nations. *Kiel*, the capital of Holstein, is celebrated for its university. It is situated near the canal which unites the River Eyder with the Baltic.

In addition to the territories above mentioned, Denmark possesses Iceland, the Faroe Isles, and West Greenland.

ICELAND.

The *aspect* of Iceland is extremely rugged and dreary. It is traversed by ranges of mountains, abounding in volcanoes; its surface is covered with immense tracts of lava; and torrents of mud and boiling water are thrown out from its spouting springs.

Grain is not cultivated; *trees* are unknown; and *vegetables* are few. The *support* of the people is derived in part from the cattle, sheep, and reindeer, fed on the scanty herbage of the valleys, but chiefly from the fisheries. The down of the eider-duck is an important article of *export* from this island, and the Faroe Isles. Their *fuel* is turf.

Their *manufactures* are few and coarse, and insufficient for domestic consumption. Their *commerce* is small, confined chiefly to the importation of grain, timber, and other necessaries. The *people* are simple and hospitable in their manners; honest, industrious, and temperate in their habits; and better *educated* than the common people in almost any other country of Europe.

GREAT BRITAIN.

120,000 sq. ms. 24,000,000 Inhab. 200 Inhab. to a sq. m.

The United Kingdom of Great Britain and Ireland embraces England, Scotland, and Ireland, usually termed the British Isles. The British Empire includes numerous foreign possessions in Europe, Asia, Africa, America, and Australia, containing 60 millions of inhabitants. In commerce, wealth, and power, it is not exceeded by any empire in the world.

Counties of England.

Questions.—What are the six northern counties of England? Four, bordering on Wales? Three south-western? Three south-eastern? Four southern (intermediate)? Eight eastern——four larger, being maritime; and four smaller, inland? Twelve midland counties—five northern, three central, and four southern? Six counties of South Wales? Six of North Wales?

☞ Mon'*th* abbr. for Monmouth.—West'*mld.* for Westmoreland.

ENGLAND AND WALES.

58,000 sq ms. 14,000,000 Inhab. 240 Inhab. to a sq. m.

England has a great variety of *surface*. Some parts present the rugged features of a mountainous tract, and others the gloom of barren moors or heaths; but the general aspect of its landscape has more of softness and beauty. It is usually level or gently undulating, watered by copious *streams*, which produce a beautiful verdure. The number and neatness of the farms, and the country seats of the wealthy, add to the natural beauties of the *scenery*.

A range of *mountains*, not exceeding 3,800 feet in the highest part, traverses the western side of England, from Cornwall to Cumberland, and gives a mountainous character to Wales. There are numerous streams and canals, which extend the advantages of *inland navigation* to every part of the kingdom; and the roads, bridges, and travelling conveyances have reached a high state of perfection.

The *coast* is indented with numerous bays and harbors, which are rarely frozen in winter, and present every facility for foreign commerce.

The *peasantry* are better instructed than in most countries of Europe, and are generally industrious, honest, and frugal in their habits. The *sailors* and *soldiers* of England are distinguished for their bravery and discipline; the *merchants* for their integrity and wealth; and the *mechanics* for their skill and industry. In *the higher classes*, there is an unhappy prevalence of luxury and corruption, as in most of the continental nations; and foreigners charge them with a haughty reserve of manners.

The *agriculture* of England is more improved than that of any other part of Europe. Its *population* is dense, and it is dependent in some degree on importation for a supply of grain. In the variety and amount of *manufactures*, England is unrivalled. Its *fisheries* are of great value, and its *commerce* of vast extent. From these sources, *wealth* is continually flowing in, with a rapidity scarcely known in any country, except those which furnish the precious metals.

London is the capital of the British Empire. It is admirably situated for trade; and in population, commerce and wealth, in scientific, literary and benevolent institutions, it is the first city of the civilized world.

Five miles below London is *Greenwich*, the seat of the Royal Observatory, from which longitude is reckoned. It is also distinguished by the Royal Hospital for disabled seamen. *York* is the metropolis of the north of England, and the second city in dignity. It is celebrated for its magnificent Gothic *minster*, or cathedral. *Liverpool* is next to London in commerce. It is the principal seat of the trade with America, and has been rapidly increasing in population and wealth. *Bristol* holds the next rank in commerce, and carries on extensive trade with other parts of the empire, and with Europe and America. *Hull*, the chief port on the eastern coast north of London, is the principal channel of trade to the north-eastern and midland districts of England. It is also extensively engaged in the Greenland fishery. *Newcastle* on the Tyne, is particularly celebrated for its coal trade. It is also employed in foreign commerce, and in the Greenland fishery. *Exeter* is a commercial town, situated on the southern coast. It is the metropolis and chief emporium of the west of England. *Yarmouth*, at the mouth of the Yare, on the eastern coast of Norfolk, is important as a seaport, and has the largest fishery on the English coast.

Naval Stations.—Portsmouth is the chief naval station of Great Britain; and has a fine harbor, capable of receiving the whole navy at once. The road of Spithead, between the harbor and the Isle of Wight, is the chief rendezvous of the navy. *Gosport*, on the entrance to the harbor, contains various naval establishments, connected with Portsmouth. *Plymouth*, at the mouth of the Plym, is second only to Portsmouth as a naval station. *Chatham* is also a naval port of consequence.

Only a few of the *manufacturing towns* can be enumerated. *Manchester* is the second place in the kingdom for population, and first in manufactures, especially those of cotton. *Birmingham* is particularly remarkable for its metallic manufactures, and has been styled "the toyshop of Europe." *Leeds* is distinguished for its cloths—*Sheffield* for its cutlery—*Norwich* for its worsted stuffs—*Leicester* and *Nottingham* for stockings and hosiery—*Worcester* for its woollens, and especially for its porcelain—and *Kidderminster* for its carpets.

Of the *places of fashionable resort; Brighton* is the most celebrated place for sea-bathing; *Ramsgate, Margate,* and *Scarborough* are also much frequented. Among the mineral springs which collect visiters, *Bath* is the most distinguished, and has gradually become one of the most elegant and dissipated cities in England. *Cheltenham, Clifton, Tunbridge-Wells, Buxton, Matlock,* and *Harrowgate,* also have mineral springs, and are frequented by thousands of visitants annually.

Oxford and *Cambridge* are celebrated for their universities, and owe their population and importance to these. Oxford appears like a city of palaces. Cambridge is inferior in elegance. *Windsor* is distinguished for its magnificent castle, which has long been a favorite residence of the English monarchs. *Canterbury* was the first seat of Christianity in England; and is now the residence of the archbishop of the kingdom. *Caernarvon* and *Caermarthen* are the principal towns of Wales.

Of the islands on the coast, the *Isle of Wight* is remarkable for its fertility and the beauty of its scenery. *Anglesea,* on the coast of Wales, is distinguished for its copper mines. The *Isle of Man* contains a singular people, tenacious of their ancient customs, and still governed in part by their own laws. The *Scilly Islands* are a numerous rocky group, off the Land's End, only a few of which are inhabited.

SCOTLAND.

30,000 sq. ms. 2,400,000 Inhab. 80 Inh. to a sq. m.

Scotland is a rough and mountainous country *in the north,* with only a few fertile valleys. The *middle* division is intersected by the Grampian Hills, 40 to 60 miles wide, which furnish good pasturage. The *southern* and south-eastern parts spread into fertile plains, resembling those of England. The *rivers* are numerous, but short and rapid, and unfit for *navigation.* This country is peculiarly celebrated for the grandeur and wildness of its *scenery.* The *climate* is severe, and storms are often dreadful. Neither climate nor soil is favorable to *tillage,* and the greater part of Scotland is devoted to pasturage. The grains chiefly cultivated are oats, rye, and barley.

The *people* are divided into two great classes. The *Highland Scotch* appear to be descended from the old Britons, and retain some traits of former rudeness. They dislike tillage, and devote themselves to the keeping of flocks and cattle. They are remarkable for a bold, and even lawless spirit, as well as for simplicity and hospitality of manners.

The *Lowland Scotch* are intelligent, enterprising, and industrious, probably superior to almost any nation in Europe in education, and integrity of character. They hold a high rank in literature. *Agriculture* has been much improved of late years in Scotland. *Manufactures* are in a flourishing state, especially those of cotton. The *commerce* and *fisheries* are important.

EDINBURGH is the metropolis of Scotland, and has long been distinguished as the seat of science and literature. It has few manufactures; but it carries on an important trade through *Leith,* its seaport, which is about two miles distant.

Glasgow, on the Clyde, is the first city of Scotland in population and in commercial importance. It is regularly built, and flourishing in manufactures as well as in trade. It has much intercourse with the West Indies and America. *Port Glasgow* is 20 miles farther down the river, at the mouth of the Clyde. *Greenock* is the chief seaport of Scotland. Its commerce is extensive, and its population has increased with great rapidity. *Paisley* is noted for its cotton and muslin manufactures, which give employment to more than 30,000 persons in the city and vicinity. *Dundee* is a commodious port, and is flourishing in manufactures and trade.

Aberdeen is the chief town in the north of Scotland. It consists of two parts —the new town, a large and populous seaport—and the old town, about a mile from the sea, distinguished for the university of King's College. *Perth* is one of the best built towns of Scotland, except Edinburgh. *St. Andrews* has a university. *Berwick* is a border town, upon the Tweed. *Sterling* is built on the steep acclivity of a rock, about 80 miles north of Edinburgh, and has been distinguished in history.

The coast of Scotland is lined with numerous *islands,* most of them rocky and rough.

The *Hebrides, or Western Isles*, are 300 in number, extending 180 miles along the western coast of Scotland. They are estimated to contain 70,000 inhabitants.

The *Orkneys* on the north, comprise 26 islands, inhabited by an industrious people. *Kirkwall*, the chief town, is distinguished for an ancient stately cathedral, dedicated to St. Magnus.

The *Shetland or Zetland Isles*, are the most northern Scottish Isles, 86 in number, of which 40 are inhabited by 21,000 people. 70 or 80,000 sheep are fed here, and wool and fish are exported. The aspect of these islands is peculiarly rugged and bleak; and the precipitous rocks on the coast present some of the most sublime scenery.

IRELAND.

30,000 sq. ms. 7,700,000 Inhab. 250 Inhab. to a sq. m.

Ireland is destitute of any extensive or considerable ranges of *mountains*, but many are distributed in small groups. Its *surface* is uneven, with hills of some height, but easy of ascent and cultivation. It is generally well *watered* and fertile. Its *bogs* and morasses, which cover one-tenth of the surface, partake of the general irregularity, but are unfit for cultivation.

Ireland abounds in *lakes;* and the loughs, or salt-water lakes are so numerous, that every part of the country has easy access to the sea. Its *coast* has many fine harbors, and is well adapted to commerce. The *climate* is very mild and moist, and produces a beautiful and continued verdure, which has led to its poetical appellation of "Green Erin."

The Irish *peasantry* are in the most wretched ignorance and poverty, and one-seventh of the houses are inhabited by *paupers*. They are degraded by the oppression of landlords, and their stewards, or "middle men." Their cabins and mode of living are scarcely superior to those of the American Indians. Two-thirds or three-fourths of the inhabitants are Catholics.

Tillage is not understood. The implements of husbandry are very rude and ill constructed. Potatoes and oats are the principal crops raised for food by the poor. The *soil* is best adapted to pasturage. The Irish are most successful in *grazing* and dairy *husbandry*, and produce the finest beef and butter which is found in commerce. The *manufacture* of linen and muslin is carried on to a great extent, and these are important articles of *export*.

DUBLIN is the second city of the British Isles in extent and population: and is generally reckoned the seventh in Europe. It is the emporium of Irish commerce, and the seat of government. Its university is celebrated.

Cork is the second city in Ireland, and possesses a more extensive foreign trade than any other port. Its harbor is safe and spacious. *Limerick*, on the Shannon, is next in rank; and is one of the most flourishing towns in the island. Its manufactures are prosperous, and it has a large share of the internal and foreign trade of the country. *Waterford* is a populous and commercial city. *Belfast* is also important for its commerce, and is the chief seat of the linen trade.

Kilkenny is a neat town, remarkable for its quarries of white and black marble, of great beauty. *Galway, Londonderry, and Drogheda*, are flourishing places of trade.

FOREIGN BRITISH POSSESSIONS.

In addition to her Indian, American, and Continental territories, Great Britain has a number of insulated *foreign possessions*, which may most properly be described in this place.

Guernsey, Jersey, Alderney, and Sark, are small islands lying on the coast of France. The inhabitants generally speak the old Norman French; and have more resemblance to the French than to the English. Their internal government is regulated by their own laws.

Heligoland is a barren rock, opposite to the mouth of the Elbe, inhabited by 200 Danish fishermen, and occupied by a British garrison, as a place of trade in war.

Malta is a celebrated island of the Mediterranean, formerly possessed by the Knights of Malta. It is a mass of rocks, covered with a light soil; but it contains a population of 6,000 to the square mile. It is a very important place of rendezvous and deposit, for the commerce and navy of Great Britain.

Gibraltar, the celebrated fortress at the entrance of the Mediterranean Sea, is

also possessed by the British. It is a mere rock, but from its peculiar structure it has been made an almost impregnable fortress. Its situation renders it the key of the Mediterranean, and a most valuable possession to the British Empire.

The rock is surrounded by *fortifications* at every accessible spot, and is even penetrated by galleries, furnished with cannon, which form a battery of such elevation and strength, that it cannot be injured by assailants from below. The *town* is situated on the declivity, near the foot of the rock. It is governed entirely as a military post; but it is a free port, and a place of great trade. It is the resort of merchants from almost every part of the Mediterranean and Europe, and ten languages are spoken in its streets.

St. Helena is an elevated rock in the Atlantic Ocean, off the coast of Africa, which has been formed by the British into an impregnable fortress. It is important as a place of refreshment and rendezvous for the East India ships; and has become celebrated as the prison and grave of the Emperor Napoleon.

HOLLAND.

13,200 sq. ms. 2,700,000 Inhab. 204 Inhab. to a sq. m.

Holland is one of the most remarkable countries in the world. Much of its surface has been covered with water, and is below the level of the sea. By the extraordinary industry of the Dutch, it has been drained by canals, and protected by dykes or banks which still require incessant labor to maintain them.

This country is entirely destitute of *mountains* and hills, and presents the *appearance* of a large marshy plain, traversed by numerous canals, on which boats and ships are sailing through beautiful fields.

The *soil* is rich in pasturage; and the Dutch cattle, butter and cheese, are uncommonly fine. The *climate* is cold and damp, and very little grain or fruit can be raised.

The *Dutch* are patient, industrious, and neat, beyond any nation in the world. Their *commerce* extends to every part of the world, and their *manufactures* are considerable. They are not sprightly, and are unusually devoted to the pursuit of gain.

Amsterdam is the largest and most commercial city of Holland, and one of the most commercial in Europe. The houses are built on poles or timbers driven deep into the earth, on account of the marshiness of the soil. *Rotterdam* is next to Amsterdam in commerce, and is traversed by canals which admit large ships into the centre of the city. *The Hague*, is a beautiful city, and the seat of government. *Leyden and Utrecht* are celebrated for their universities.

BELGIUM.

11,500 sq. ms. 3,500,000 Inhab. 304 Inhab. to a sq. m.

The southern provinces of the Netherlands, declared themselves independent in 1831, under the name of Belgium.

Belgium is a beautiful country, generally level, but diversified with gentle swells, and in some parts hilly. It is traversed by *canals*, but they are less numerous than those of Holland.

Its *soil* is fertile and so highly cultivated, that this country has been called the garden of Europe. The *climate* is mild, and favorable to grain and fruits.

The *Belgians* have industry and neatness like those of the Dutch, with something of the sprightliness of the French. They are very fond of religious ceremonies, and inclined to superstition.

The *manufactures* of Belgium are numerous and important. Those of linen and woollen are celebrated. Its *commerce* was formerly important, but is now much diminished.

Brussels, the capital, is one of the most beautiful cities of Europe. It is distinguished for its manufactures, and especially for lace and carpets. *Antwerp* is the most commercial place in Belgium. *Ghent* has important manufactures of cotton. The treaty of peace between the United States and great Britain, was signed here in 1814. *Ostend* is the principal port on the sea coast. *Louvain* has the principal university of Belgium.

GERMANY.

Germany is *divided* into two great portions, northern and southern. The line of separation is the Sudetic Chain, extending from Westphalia to the Carpathian Mountains. Almost all parts of *Northern Germany* are flat, and the rivers run towards the north. *Southern Germany* is much more diversified, consisting in part of extensive plains—traversed by vast ranges of mountains—and bounded on the south by the Rhine and the Alps.

The *climate* is generally temperate, and the *air* is almost every where salubrious, except in marshy districts. The *soil* is various. Sandy plains and barren heaths abound on the north-west, and swamps and marshes on the north-east. Grain is raised in the north. *Agriculture* is imperfect. Good wine is made in particular districts, and the Rhenish is celebrated. *Manufactures* have made great progress in Germany, particularly linen, of which much is *exported*.

The *Germans* are, generally speaking, sincere and faithful, remarkable for industry and perseverance, but not so much for enterprise and activity. They have distinguished themselves by their extensive researches in *literature, science,* and *the arts;* and no part of Europe probably can boast so many learned men and celebrated authors.

Germany *comprises* 39 small states and free cities, and has been long styled the labyrinth of Geography. Austria and Prussia are the principal powers of the confederation. Of the remaining states, the portion south of the River Mayne is occupied by the Kingdoms of Bavaria and Wurtemberg, and the Grand Duchy of Baden. The northern part contains the Kingdom of Hanover, the Duchies of Mecklenburg, Holstein, Brunswick, and Oldenburg. The middle portion includes the Kingdom of Saxony, and most of the small states, with the dominions of Prussia.

AUSTRIA.

260,000 sq. ms. 32,000,000 Inhab. 123 Inhab. to a sq. m.

The Austrian Empire *comprises* a number of distinct kingdoms and states, subject to a single monarch, whose power varies in different parts of the empire. It is intermediate in its character between a confederation and a single state. A part of its territories belongs to the German confederation, and it takes the first rank in the diet of Germany. It is one-third larger than France, and twice as large as Great Britain and Ireland.

This empire contains several ranges of *mountains,* enclosing the basins of several rivers, and the steppes and plains of Hungary. No general account can therefore be given of its surface. Its *soil* has every variety, from the most fertile to the most barren. About one-third is *waste land;* and less than half of the rest is cultivated. Most of the empire lies in the basin of the Danube, and is well supplied with navigable *streams.*

The *climate* is like that of France, but subject to greater extremes of heat and cold. It varies from that of the warm regions on the south to that of the cold regions, connected with the mountains, on the north. Its *productions* are equally varied.

There is no less diversity in the language, religion, and manners of the *inhabitants,* than in the surface of the empire. The ardent and refined Italians of Lombardy—the cold and industrious Germans of other districts—the simple Bohemians—and the half savage inhabitants of the southern provinces, are all subjects of this empire, united by few common ties, and having little intercourse. We must therefore expect a great variety in the character of the people, and the nature and products of their employments. They generally resemble the Germans in industry and faithfulness, but are in a low state as to education.

The country is chiefly devoted to agriculture, and mines. It is richer in *minerals* than any other state in Europe. *Tillage* is not well conducted. *Manufactures* are imperfect, and insufficient for home consumption. Bohemia and Moravia are the principal manufacturing districts. Austria has but a small extent of *seacoast,* and a limited *commerce.* The *army* is large, the *territory* extensive and populous, and this empire is one of the most powerful states of Europe. It has no *foreign colonies;* but the Duchies of Tuscany, Parma, Modena, and Massa are dependent states.

Vienna is the capital of the empire, and holds a high rank among the cities of Europe for science, arts, commerce, and refinement.

Prague is the capital of Bohemia and the second city of Austria. It has been the scene of numerous battles and sieges, and has only the remnants of its former magnificence and prosperity. *Buda* is the metropolis of Hungary. *Lemburg* is the capital of Galicia, in Austrian Poland. It has much commercial importance, especially as the great thoroughfare from the Black Sea to Vienna. *Brunn* is the capital of Moravia and the centre of its commerce. Its manufactures are extensive and flourishing. *Pest* and *Buda* are merely separated by the Danube, and in fact form one city. Pest has a university and several literary institutions.

Debretzin is the principal commercial place in the eastern part of Hungary, and the seat of extensive commercial transactions. *Kremnitz* and *Schemnitz* are distinguished as the principal towns in the mining districts of Austria. *Tœplitz* is celebrated for its warm springs, and has become a fashionable resort. *Trieste* was

for a long period the only port belonging to the Austrian Empire Its harbor is spacious, and its trade extensive.

Venice, the capital of the ancient republic, was long the chief maritime power in the south of Europe; but its commercial greatness has declined; its manufactures have been rivalled by those of other states; and its population is greatly reduced. *Milan* is an extensive and magnificent city, with numerous manufactures, and considerable trade. *Mantua* is one of the oldest cities in the world, remarkable as the birth-place of Virgil. *Verona* is a large city, celebrated for a magnificent amphitheatre, built by the Romans. *Padua and Pavia* are ancient cities, and noted for their universities. *Trent* is celebrated for the ecclesiastical council convened in it, one of the most important ever held.

PRUSSIA.

106,000 sq. ms. 13,000,000 Inhab. 123 Inhab. to a sq. m.

Prussia has generally a level *surface* and barren *soil*. Some parts are *productive*, abounding in pasturage and furnishing grain for exportation. It is traversed by a number of navigable *streams*, connected by canals, which give it greater advantages for *inland navigation* than are enjoyed by most other countries of Europe. The western parts have a mild *climate;* the eastern are cold, from the influence of the winds blowing from Russia.

The *people* of Prussia Proper are brave and industrious, and particularly fond of military life. Every child is now well instructed. The kingdom embraces Poles and Germans of several classes, who possess a great variety of character and customs. The *peasants* of the eastern provinces are in a degraded state—many in slavery, and most of them extremely ignorant and miserably poor.

From the alluvial character of Prussia Proper, it has no *mineral treasures* of value except amber. Its *manufactures* are respectable. Silesia is celebrated for its linens, and furnishes some important minerals. Its *exports*, (chiefly of grain and other raw productions,) are about one-seventh of those of England.

The *importance* of this kingdom has been chiefly derived from the number and discipline of its armies, and the energy of its government. It was formerly an electorate of Germany; but has gained a large accession of territory, and now ranks among the first powers of Europe.

BERLIN is the capital of Prussia, distinguished for its splendor and for the extent of its manufactures. A few miles from Berlin is *Potsdam*, the occasional residence of the king, noted for the royal palace it contains.

Dantzic is a city of extensive commerce, situated on the Vistula, only five miles from its mouth. *Konigsburg* is a place of considerable inland and foreign trade, in the eastern part of the kingdom. *Breslaw* is the capital and centre of trade for Silesia. It has considerable manufactures, and is the seat of a university.

Posen is a place of some importance, and the seat of a university. *Magdeburg* is one of the strongest fortresses in Germany. *Halle* is celebrated for its university. *Frankfort* on the Oder has valuable manufactures and commerce.

In the western portion of the Prussian dominions, *Cologne* is the principal seat of commerce on the Rhine, and manufactures the famous Colonge water. *Aix la Chapelle*, 30 miles west of Cologne, is celebrated for two treaties of peace concluded here, and for its warm baths. *Coblentz* is situated at the confluence of the Rhine and the Moselle, and is thus enabled to carry on trade with France, Switzerland, and Germany.

ANHALT DESSAU, ANHALT BERNBURG, and ANHALT COTHEN are small Duchies surrounded by the Prussian dominions. They are not distinguished from that country, except in their political character.

GERMAN STATES.

The remainder of Germany is occupied by a number of small states. Luxemburg belongs to the Netherlands, and Holstein and Lauenburg, to Denmark. The remainder are independent states, whose situation may be learned from the following map. The *greater number* are small and unimportant, resembling a *county* of the United States in extent and resources. Bavaria and Baden and the little state of Sigmaringen are Catholic states. Nassau is equally divided between Catholics and Protestants. The remainder have a majority of Protestants; and most of them very few Catholics.

GERMAN STATES.

References.					
Ln.	Lichtenstein	S.W.	Saxe Weimar	An.	Duchies of Anhalt.
H. S.	Hohenzolleren —Sigmaringen	G.	S. Gotha	-Bernbugh Cothen–Dessau	
H. H.	H. Hechingen	M.	S. Meiningen	Lp.	Princip's of Lippe
D.	Hesse Darmstadt	C.	S. Coburg	-Detmold—Schauenburg.	
C.	H. Cassel	h.	S. Hildburghausen	L.	Lauenburg
H.	H. Homburg	S. R.	Rudolstadt	6	Hamburg
9	Frankfort	S. S.	Sonderhausen	11	Lubeck
		R. G.	Reuss Greitz	Sew	M. Schwerin
		R. L.	Reuss Lobenstein	Str.	M. Strelitz.

SOUTHERN GERMAN STATES.

The *surface* and *soil* of these states are various. The principal *natural features* are two masses of mountains, called the Black Forest, and the Alp (or Alb,) both of them cold and bleak regions, with little wood or verdure. Other parts are covered with hills, intersected by fruitful valleys.

BAVARIA.

27,000 sq. ms. 4,000,000 Inhab. 148 Inhab. to a sq. m.

Bavaria is naturally among the most *fertile* regions in Germany,—and enjoys a mild and healthful *climate*. Some portions *produce* grain for exportation, and vines and fruit in abundance. In other portions *agriculture* is very backward, and the products are insufficient for the inhabitants. No extensive *manufactures* exist: but many articles are made for exportation. The *commerce* of Bavaria in these, and in the products of agriculture, and in cattle is considerable.

The *people* were formerly very ignorant, and learning was in a low condition; but of late years, by the care of the government, *education* has been generally diffused, and the literary institutions have been raised to a very flourishing state. Bavaria possesses a small territory west of the Rhine.

MUNICH, the capital, is one of the most pleasant cities of Germany, and rapidly increasing in population. It is the centre of the most valuable manufactures in the kingdom, and a place of much literary distinction.

Augsburg holds the second rank in population. It has extensive commercial transactions, and is celebrated as the scene of some important events of the reformation. *Ratisbon* is an ancient and wealthy city, the seat of a considerable trade.

WURTEMBERG.

7,700 sq. ms. 1,600,000 Inhab. 200 Inh. to a sq. m.

Wurtemberg resembles the rest of Germany in the variety of its *surface*. It is watered by the River Neckar and its numerous branches. The *soil* is generally good and the *climate* mild. Its *vegetable productions* are abundant, and its mountains are rich in *minerals*.

Agriculture and *manufactures* are so far advanced, as not only to supply the demand for home consumption, but to furnish articles of export. *Education* and improvements have been generally diffused by the late sovereigns.

STUTGARD, the capital, is a well built city with a number of important and benevolent and useful establishments. *Ulm*, on the Danube, is the second city of the kingdom, and was formerly one of the imperial cities of Germany. Its manufactures and trade are of some importance. *Tubingen*, south of Stutgard, is one of the oldest towns in Germany, long noted for its university.

The *Principalities of Hohenzolleren Hechingen and Hohenzolleren Sigmaringen* lie within the limits of Wurtemberg. *Lichtenstein* is on its borders, on the southeastern shore of Lake Constance. They are small and unimportant states.

BADEN.

6,000 sq. ms. 1,300,000 Inhab. 188 Inhab. to a sq. m.

The *surface* of Baden is diversified. Much of it is fertile. The *climate* is agreeable and salubrious. Its *vegetable productions* are abundant, and it yields many valuable minerals. *Agriculture* has lately been improved. Its *manufactures* are neither numerous nor extensive; but are still of some importance. It *exports* wine, grain, timber, and iron to some extent.

The *people* are generally Lutheran. *Education* has been well attended to of late; and knowledge is more general than in many of the other German states.

CARLSRUHE (or Charles's rest) is the capital, and a part of which is finely built, with its streets like the radii of a circle. *Freyburg* contains a university. *Manheim* is one of the finest towns in Germany, and a flourishing place.

Heidelberg is an ancient city, celebrated for a university, recently revived by the grand duke. This place has also been noted for its large tun, which holds 600 hogsheads.

MIDDLE GERMAN STATES.

SAXONY.

5,800 sq. ms. 1,500,000 Inhab. 259 Inhab. to a sq. m.

Saxony is separated from Bohemia by a lofty chain of mountains. The *climate*

is mild. The mountains on the south are rich in *mines*. The forests are preserved with care, to furnish fuel for them, and the valleys only are cultivated. The level districts of the north are fertile in grain, and *agriculture* is well conducted.

Saxony has made greater progress in *manufactures* than any other part of Germany. It also carries on extensive *commerce* with the neighboring states. The German *character* is most strongly marked among the Saxons. They have done much in the cultivation of literature and the elegant arts. The *common schools* are numerous and well conducted, and the lower classes well educated.

DRESDEN is the capital, and the seat of the arts in the north of Germany. It has extensive and elegant manufactures, especially of porcelain.

Leipsic is one of the most celebrated cities, for its university and for its great fairs, held twice a year, in which books are a special object of attention. It was the scene of a sanguinary battle between the French and allied armies in 1813. *Freyburg*, near the mountains, is celebrated for its school of mineralogy, lately conducted by the distinguished Werner.

SAXON STATES.

SAXE WEIMAR—COBURG—MEININGEN—HILDBURGHAUSEN.

These states are crossed by a branch of the Erzgeberg Mountains, which cover a part of their *surface*, and render the rest uneven and hilly; but they are diversified with valleys and plains.

The mountains are rich in *mineral treasures*. The *soil* varies with the situation, from entire barrenness to great fertility.

The *government* of these states is more free than that of the Hessian States, and *education* is more attended to. *Agriculture* and mining, which form the chief employments of the people, are conducted with much skill, and *manufactures* are somewhat advanced. The Prince of Saxe Weimar is distinguished as a patron of *learning;* and that state is superior to almost every other in Germany, in arts, sciences and literature.

Each state has a capital of the same name. The late Duchy of Gotha is now divided among the three remaining Saxon States.

WEIMAR is a large town containing one of the most valuable libraries in Germany. It is much resorted to by strangers.

Jena was the scene of a great battle in 1806; but is most distinguished for its university, which is possessed in common by the four principal Saxon States, and holds a high rank among the literary institutions of Germany.

Gotha is a beautiful town situated on a hill. COBURG is a large town, and has an extensive trade. MEININGEN and HILDBURGHAUSEN are small towns of little consequence.

REUSS GREITZ, REUSS LOBENSTEIN, SCHWARTZBURG RUDOLSTADT, SCHWARTZBURG SONDERHAUSEN.

The three first of these states are included within the limits of the Saxon States, and resemble them in all important particulars. These are among the smallest states of Germany. Sonderhausen lies in the Prussian territories on the north.

NASSAU.

1,774 sq ms. 340,000 Inhab. 192 Inhab. to a sq. m.

Nassau lies at the confluence of the Rhine and the Mayne. The *surface* is almost a continued series of hills and valleys, presenting a great variety of fine *scenery*.

The *climate* varies with the elevation. Grazing and vineyards are the chief branches of *agriculture*. *Grain* is not raised in sufficient quantities for home consumption; but fine wines are made for *exportation*. The mountains abound in *minerals*, and this duchy is particularly noted for mineral springs. The chief of these are at Selters, or Seltzer, Ems, and Wisbaden.

Nassau, the capital, is a small town.

HESSIAN STATES.

HESSE DARMSTADT—HESSE CASSEL—HESSE HOMBURG.

4,483 sq. ms. 783,000 Inhab. 168 Inhab. to a sq. m.

The Hessian States lie on both sides of the River Mayne, in several separate portions, surrounded by Baden and Bavaria, the Saxon States, and Hanover and Nassau. Hesse Cassel lies chiefly on the River Fulda.

Most parts of these states are *mountainous* or hilly. The mountainous regions abound in timber and minerals; but are ill adapted to *cultivation*. The *climate* also is cold, and unfavorable to vegetation. Many of the valleys are very fertile, and have a milder climate.

These states have nominally a limited *government*, but in fact arbitrary; and the *people* are much less improved than in some other parts of Germany. In Hesse Cassel, only the oldest sons of clergymen and the sons of nobles, counsellors, and public officers are allowed to receive a liberal *education*. More attention has been paid to the instruction of the people of late; and seminaries have been established in these, as in most of the German States, for the education of teachers. *Agriculture* and *manufactures* are in a low state. Hesse Cassel *exports* linen.

CASSEL, on the River Fulda, is the capital of that duchy. Its public buildings are numerous; its trade and manufactures are small. *Hanau* is one of the most commercial towns of Hesse Cassel. It is connected with the River Mayne by a canal.

Marburg is a considerable town, with a well endowed university, in which the celebrated Leander Van Ess, the friend of Bible Societies, is a Professor. *Fulda* is the capital of one division of Hesse Cassel.

DARMSTADT is a neat, well built town, increasing in size. *Mentz* or *Mayence*, is an ancient fortified city, the largest and finest in Hesse Darmstadt.

Worms is renowned for the Diet, before which Luther was summoned to answer for heresy, in 1521.

HOMBURG is situated in a beautiful country, at the foot of lofty mountains; and is the capital of the principality of Homburg.

FRANKFORT ON THE MAYNE, is a free city lying within the Hessian States. It is one of the principal cities of Germany for the extent and amount of commerce, and is the permanent seat of the Diet. It is situated on both sides of the river; and its territory extends for some distance on the right bank. It has two annual fairs, frequented by merchants from all parts of Europe.

COUNTY OF WALDECK.

The County of Waldeck is bounded by the Hessian States on the south and east, and resembles them in character. It is among the smallest states in Germany.

NORTHERN STATES OF GERMANY.

The northern states of Germany are the kingdom of Hanover, the states of Brunswick, Lippe, Oldenburg, Mecklenburg, Holstein, and Lauenburg, and the free cities of Bremen, Hamburg, and Lubeck, all of which border upon Hanover, or are included in it.

HANOVER.

15,000 sq. ms. 1,500,000 Inhab. 100 Inhab. to a sq. m.

The kingdom of Hanover is an inheritance of the King of Great Britain, and is *governed* by him through a viceroy.

It *consists* of an extensive plain, with gentle rising grounds, but generally destitute of mountains. In the *south* the valleys are fertile. In the *north* there are barren heaths, which extend into Luneburg, and have been styled the Arabia of Germany; but many of these tracts are well adapted to pasturage. The *climate* is not good, and the temperature is very variable. The Hartz Mountains are rich in *mines*, which are extensively wrought.

The *people* have preserved much of the simplicity and hospitality of the ancient Germans. *Instruction* has been much neglected; but it is now extending

by the influence of the king, and schools are established in every village. *Agriculture* is in a low state, and the grain is insufficient for home consumption. The *manufactures* are neither numerous nor important, but the state of the kingdom is improving in all respects, by the aid of Great Britain. Cattle and horses are *exported*.

HANOVER is the capital of the kingdom, and derives its chief importance from this circumstance. *Gottingen* is the second town in consequence, principally celebrated for its university, which holds a high rank. *Emden*, at the mouth of the Ems, is the chief seaport of Hanover. It has a fine harbor, and considerable trade. *Luneburg* and *Osnaburg*, are capitals of the provinces of the same name.

BRUNSWICK.

24,000 sq. ms. 230,000 Inhab. 153 Inhab. to a sq. m.

Brunswick lies chiefly on the head waters of the Weser, and is *divided* into two parts, separated by the territory of Hanover. The *northern part* is flat and fertile. The *southern* is mountainous, lying in the midst of the Hartz Mountains, which are covered with *forests*.

One-third of the surface of this duchy is under *cultivation*, and one-third is occupied for *grazing*. The remainder is covered by mountains, forests and water.

BRUNSWICK, the capital, has several institutions for education, and is noted for its annual fairs, which are next to those of Leipsic and Frankfort in importance. *Wolfenbuttel* is a large and fortified town. The castle was formerly the residence of the dukes, and contains a noble library.

LIPPE-DETMOLD—LIPPE SCHAUENBURG.

These principalities lie on the southern border of Hanover, on the River Weser. They resemble the surrounding region in all important respects.

Detmold is a well built town.

DUCHY OF OLDENBURG.

2,500 sq. ms. 240,000 Inhab. 96 Inhab. to a sq. m.

This duchy is surrounded by Hanover. It is entirely a flat country, greatly *resembling* Holland, and some districts require dikes to protect them from inundation. In some parts the *soil* is rich; in others it is either marshy or sandy, and produces little. The *grain* is insufficient for the inhabitants. They are chiefly *employed* in attending to cattle, and in the fisheries.

OLDENBURG, the capital, is a fortified town. The Ducal house of Oldenburg is one of the most distinguished in Europe. The royal families of Denmark and Russia are descended from it.

BREMEN is a free city, on the borders of Oldenburg, and included also in Hanover. It is generally well built and has an extensive commerce.

HOLSTEIN and LAUENBURG, belonging to Denmark, lie north of Hanover on the opposite side of the Elbe, and include the free cities of Hamburg and Lubeck.

HAMBURG is one of the most celebrated commercial cities of Europe. It covers a large space of ground, but is not remarkable for beauty. Its manufactures are important. By means of the Elbe, it has an extensive trade with the interior of Germany; and is the great emporium of its commerce with foreign countries.

LUBECK, north-east of Hamburg, is situated on a stream, between Holstein and Mecklenburg, about eight miles from the Baltic. Its trade is checked by its vicinity to Hamburg, but yet is considerable.

DUCHIES OF MECKLENBURG.

48,000 sq. ms. 75,000 Inhab. 83 Inhab. to a sq. m.

MECKLENBURG SCHWERIN AND STRELITZ.

Schwerin lies on the Baltic Sea, and Strelitz to the south-east of Schwerin. Both duchies are generally level, or moderately uneven in their *surface*, and contain numerous lakes, marshes, and barren tracts of sand. A considerable part of them is also covered with forests. The *climate* is cold and damp, but is improving by cultivation and draining. The people are principally employed in *agriculture;*

and grain, cattle, and sheep are their chief *exports*. *Manufactures* are not flourishing.

SCHWERIN, the capital of the duchy, is pleasantly situated on a lake. This town and STRELITZ, are of little consequence, except as the capitals of the duchies.

SWITZERLAND.

15,000 sq. ms. 2,000,000 Inhab. 133 Inhab. to a sq. m.

Switzerland is a land of mountains, valleys, and streams. It is bordered and traversed by the Alps, the loftiest *mountains* in Europe, abounding with rugged and sublime *scenery*, and watered by numberless torrents descending from their sides.

The *summits* of the Alps are composed of inaccessible, craggy rocks, destitute of vegetation, and capped with ice and snow. The *glaciers* are estimated to cover 1000 square miles, and much of this country is uninhabitable. The *declivities* are rough and cold, and admit only of pasturage. The *valleys* are often fertile. The *northern part* is somewhat level.

The heat is often excessive in the valleys, while the sides and tops of the mountains present the *climates* and *plants* of all countries of Europe, from Italy to Lapland. On one side of the hills, summer is frequently far advanced, while spring has scarcely begun on the other. Storms are often violent; and where different climates are so near, there are, of course, frequent and sudden changes.

The *Swiss* are simple and hospitable in their manners, brave, independent, and faithful in their disposition, and strongly attached to their native soil. *Education* is general; good order prevails among them; and crimes are rare. They are skilled in *agriculture;* but their crops are uncertain. They are obliged to *import* some of their grain, and depend chiefly on the breeding of cattle for subsistence. In some districts, they are almost strangers to bread.

Their *manufactures* are various and of considerable amount, and are *exported* to Germany, France, and the Netherlands, by means of their rivers.

The *towns* are neither numerous nor large. The people live chiefly in villages and hamlets on the sides of the mountains. BERNE is usually considered as the capital of Switzerland. BERNE, LUCERNE, and ZURICH, are alternately the seats of the diet.

Basle, (or Bale,) and *Zurich* are two of the most commercial towns. Zurich is celebrated for its university, and Basle for its college. *Geneva* is beautifully situated on the lake of the same name, and is celebrated for its literary institutions.

Lausanne, the capital of the Pays de Vaud, is an interesting town on the side of the Alps, about 1000 feet above the level of the sea. *Scaffhausen* is near the celebrated fall of the Rhine, and the trade on this river passes through it.

FRANCE.

215,000 sq. ms. 33,000,000 Inhab. 150 Inhab. to a sq. m.

France is surpassed by no country in Europe for climate and *soil*. Its *surface* is generally level or gently undulating. Its *climate* is temperate, dry, and salubrious. It yields in different parts the fruits of the warm and temperate regions, and is especially productive in grain.

The *French* are a brave, ingenious, active people, polished and gay in their manners, but generally charged with looseness of morals. A large part of the community are *uninstructed;* but there are many distinguished men of science, and much is now done to promote universal education.

Agriculture is more improved than in most countries of Europe, but much inferior to that of England. The *vineyards* furnish a large proportion of the exports. *Manufactures* are numerous and excellent, but not so extensive as those of Great Britain. The *commerce* of France is considerable, and extended to every part of the globe. The *resources* of this nation are great. Its *army* is powerful and its *navy* respectable.

PARIS, the capital, is the second city in Europe in size, and probably the first in splendor. It is the metropolis of France for literature, science, and taste, as well as the seat of government. *Versailles*, in the neighborhood of Paris, is a considerable city, containing a splendid palace, which was once the favorite residence of the kings. *Havre de Grace*, or Havre, is the seaport of Paris, at the mouth of the Seine, and is the channel of its foreign commerce.

Marseilles is the richest and most flourishing city in the south of France, and the best and most frequented port on the Mediterranean Sea. It is the only channel of communication between France and the Levant, as well as the northern coasts of Africa; and is the great outlet for the produce and manufactures of the southern provinces. *Bordeaux* is another of the principal seaports, and the chief place for the export of wines. It has manufactures of importance. Its commerce with the interior is very considerable, and its maritime trade extends to most parts of the globe. *Rochelle* is a place of considerable trade with the French colonies. *Nantes* is a large city, extensively engaged in manufactures, and also in trade with the interior and with foreign countries. *Brest* is the chief naval station on the Atlantic, and the principal resort of the channel fleet. Its harbor is almost impregnable, and its naval arsenals are extensive. *Cherburg* has been fortified, and furnished with an artificial harbor, at an expense of 25 millions of dollars for the same purpose. *L'Orient* and *Rochefort* are also naval stations. *Toulon* is the naval station for the Mediterranean, and the second port, in this respect, in the kingdom.

Lyons was formerly the second city in the kingdom. It has long been celebrated for its silk manufactures, and still furnishes more articles of silk, than all the rest of France. *Rouen*, on the Seine, is an important city, with numerous manufactures and extensive commerce. The tide brings up vessels of 200 tons to this place. *Lisle* (or *l'Isle*, so called from its being surrounded formerly with marshes) was the capital of Flanders. It is celebrated as a strong fortress, and is a place of extensive commerce. *Strasburg*, near the Rhine, is an important seat of inland trade. *Rheims* is a large city, celebrated as the place of coronation of the kings of France. *Amiens* was remarkable for an important treaty between England and France, in 1802.

Orleans is an ancient and celebrated place, and an important deposit of articles from the interior, designed for foreign trade. *Toulouse* is a place of considerable trade, on account of its situation at the entrance of the Canal Royal into the Garonne. *Montpelier* is much resorted to on account of the salubrity of its climate, and has an excellent school of medicine.

THE ISLAND OF CORSICA is a possession of France. It is covered with lofty mountains, and its soil is stony and ill cultivated. The principal source of wealth is in the timber of its forests. It has valuable mines, and there are important fisheries on the coast; but the people have too little intelligence and industry to improve their natural advantages.

Bastia is the principal town. *Ajaccio* is distinguished as the native place of Napoleon Buonaparte.

SOUTHERN EUROPE.

SPAIN.

180,000 sq. ms. 14,000,000 Inhab. 78 Inhab. to a sq. m.

Spain has some resemblance to Switzerland in the mountainous character of its *surface*. It is traversed by several rugged chains from east to west, separated by fertile valleys watered with numerous streams. *The two Castiles* form a tableland in the centre of the kingdom, 1,800 feet above the level of the sea. The face of the country is of course greatly diversified, and adorned with fine *scenery*.

The *soil* is generally fertile, and rich in the most valuable productions; but the state of cultivation is poor. The *climate* is one of the hottest in Europe; but the *air* is dry, serene, and healthy. The *interior* is very cool on account of its height. The *coasts* are refreshed during a part of the day by the sea breeze, and sometimes scorched by the hot winds from Africa.

The *higher classes* are indolent and haughty, but are praised for their noble and generous spirit, and high sense of honor. The *peasants* are ignorant and the nation superstitious. Bull-fights are a favorite amusement. *Agriculture* is much neglected. The raising of sheep is the most considerable branch. *Manufactures* are in a low state. Silk is the most important. The *commerce* of Spain is chiefly carried on by other nations. Her *wealth* has been principally derived

from the silver and gold mines of her colonies in America, most of which have become independent; and this kingdom is now greatly reduced in resources and power.

MADRID has neither commerce nor manufactures. It derives its importance only from being the capital of the Spanish monarchy. It is situated in a sterile region, and provisions are obtained from remote provinces, or from foreign countries.

Seville was formerly the capital of Spain, and the seat of American commerce; and it is still a large handsome city, respectable for its manufactures. *Cadiz* is considered one of the most ancient towns in Europe. It is the great emporium of commerce (especially with America,) in the south of Spain, and the chief station of the Spanish navy.

Barcelona is the second city of Spain in population, and one of the first in manufactures, commerce, and wealth. *Valencia* is celebrated for its manufactures; but its trade, although considerable, is inferior to that of Barcelona. It has no harbor, and the vessels unload at a distance from the town. Its university is the first in celebrity in Spain. *Carthagena* is another flourishing port, said to have been built by Asdrubal, the Carthaginian General. *Malaga* is a large city, at the bottom of a capacious harbor, on the southern coast. Its commerce is considerable.

In the northern part of Spain, *Corunna* is noted for its safe and spacious harbor, and is the principal channel of communication by packets, from Spain to the American colonies and England. The harbor of *Ferrol* is unrivalled in Europe for extent, depth, and safety; and is an important naval station. *St Sebastian* is a port of some importance on the northern coast. *Saragossa* is an ancient city, chiefly distinguished for the destructive sieges it has sustained. *Granada* was the capital of the ancient Moorish empire in Spain. *Murcia*, *Cordova*, *Badajos*, and *Toledo*, are among the most distinguished ancient cities. Salamanca has long been a distinguished seat of learning.

Majorca, *Minorca* and *Ivica*, are fruitful islands, inhabited by a peaceful and simple people. In Minorca is the fine harbor of *Port Mahon*, now the chief resort of the American naval force in the Mediterranean.

PORTUGAL.

34,000 sq. ms. 3,500,000 Inhab. 103 Inhab. to a sq. m.

The *surface* of Portugal is varied, but a large part of it is traversed by the mountain chains which cross the whole peninsula. Many portions are rugged and stony. The valleys are very fertile. The cold is often severe upon the mountains; and the heat excessive in the narrow valleys. Its *climate* is generally remarkable for a mild and agreeable temperature, produced by its situation between the mountains and the ocean; and it was formerly much resorted to from England for the recovery of health.

The *Portuguese* are friendly and hospitable, but generally superstitious, haughty, and indolent. The *peasants* are in a state of vassalage—temperate and lively, but generally ignorant and very backward in all improvements. Their *agriculture* is wretched. *Manufactures* are generally neglected. The *commerce* of Portugal is considerable, especially in the productions of her colonies. The principal productions of the country *for exportation*, are wines, salt, and wool. The *wealth* and *power* of Portugal are small. There are few towns of importance.

LISBON is the capital of the kingdom, beautifully situated, at the mouth of the Tagus. *Oporto* is the second commercial town, and exports great quantities of the Port (or Oporto) wine. *Setuval*, or *St. Ubes*, has a considerable trade in salt. *Braga* is the principal town of the interior. *Coimbra* is celebrated for its university.

ITALY.

120,000 sq. ms. 22,000,000 Inhab. 183 Inhab. to a sq. m.

Italy has been long and deservedly celebrated for the fertility of its *soil*, the serenity of its *air*, and the beauties of its *landscape*. It is a narrow peninsula, lying between the Gulf of Venice and the Gulf of Genoa. It is *bounded* by water on all sides except the north, where it is sheltered from the cold winds by the Alps. It is *divided* through its whole length by the Appenines, into the eastern and western declivities. They render the *surface* irregular and waving, and produce a great variety of picturesque scenery. Between the Appenines and the

Alps is *the basin of the Po*, which is not exceeded in fertility by any part of Europe. It partakes somewhat of the cold of Switzerland, from the vicinity of the mountains, and the elevation of the ground.

Most parts of Italy are remarkable for their *salubrity*. The Maremma is a tract on the shores of the Mediterranean, extending from the borders of Naples to Leghorn, which is chiefly devoted to pasturage. Part of it is occupied by the Pontine Marshes; the whole has so pestilential an air, that it is scarcely inhabited; and even those who go to gather the harvests often perish with disease. The influence of this pestilence is said to be extending; and the lower parts of the city of Rome partake of it at certain seasons.

The Kingdom of the Two Sicilies occupies the southern portion of the peninsula, and includes the island of Sicily. The Roman States occupy the middle regions. The basin of the Po, or Lombardy, forms Austrian Italy, or the Lombardo-Venetian kingdom. The north-western portion, formerly Savoy and Piedmont, is included in the kingdom of Sardinia, which embraces the island of the same name. The Duchies of Tuscany, Parma, Lucca, and Modena, lie near the Gulf of Genoa, between Sardinia and the Roman States.

NAPLES,

OR THE KINGDOM OF THE TWO SICILIES.

42,000 sq. ms. 7,700,000 Inhab. 183 Inhab. to a sq. m.

The *continental portion* of this kingdom, which comprises the southern half of the peninsula, has an irregular and mountainous *surface*, but a fertile soil and warm *climate*, capable of producing the most luxuriant *vegetation*.

The *common people* are ignorant and indolent. The festivals of the church occupy a large portion of the year. Licentiousness and vice are dreadfully prevalent. These circumstances, and the oppressive character of the government, lead to a gross neglect of *agriculture*. There is little *manufacturing industry*, and little, if any, activity in *commerce*. The same remarks are applicable to the island of Sicily. Hence this fair portion of Europe does not supply its own inhabitants with *food;* and poverty and beggary are no where more extensive or distressing.

Naples, the capital of the kingdom, surpasses every city of Europe in the beauty of its situation and appearance. It is populous and flourishing, but not remarkable for extensive manufactures or commerce.

Bari is a large commercial town on the Adriatic, where the kings of Naples were anciently crowned. *Reggio*, the ancient Rhegium, is a place of some size on the Gulf of Messina. *Capua* is a small city, but ancient and celebrated. *Lecce* is a trading city, near the south-eastern extremity of Italy.

Sicily is the largest island in the Mediterranean, and has long been celebrated as the scene of the most tremendous volcanic eruptions. The volcanic character of the whole kingdom subjects it to frequent earthquakes.

Palermo is the capital of Sicily, and was formerly the residence of the royal family. It is not flourishing, either in commerce or manufactures. *Messina* is a large city, with a fine harbor, and extensive trade. *Catania* is situated at the foot of Mount Etna, and has been destroyed several times by its eruptions and earthquakes; but it is now handsomely rebuilt. *Marsala*, on the western coast, exports most of the wine called Sicily-Madeira.

The Lipari Isles, which belong to this kingdom, are twelve in number; but four only are inhabited. On one of these is the great light-house of the Mediterranean—the Volcano of Stromboli.

ROMAN STATES.

17,500 sq. ms. 2,500,000 Inhab. 143 Inhab. to a sq. m.

The Roman States have the same variety in their *soil* which has been described in Naples, and the *people*, *agriculture*, and *manufactures* are in the same wretched state. The modern Romans are spiritless and ignorant, and a large part of the territory is occupied by the pestilential Maremma, and Pontine Marshes, or by desolate, uncultivated lands. Pictures, statuary, mosaic-work, and jewelry, are almost the only articles sought by other nations from these states. In these, their artists are still unrivalled.

The *power* and *revenue* of the Pope were formerly immense, because he was acknowledged as the ruler of kings. But his influence is now very small, and this country is almost without weight in the political scale.

ROME is the capital of these states, and was for a long period the ecclesiastical capital of the whole Catholic Church. Its ancient magnificence appears only in its ruins. Its wealth is wasted, its population reduced, and its power and influence are annihilated. Its commerce is trifling, and its manufactures are almost confined to the productions of the fine arts. It is chiefly supported by the resort of foreign travellers and artists.

Bologna is the second city of these states, the seat of a renowned university, and a celebrated academy of science. *Ferrara* is also the seat of a university. *Ancona* is a place of considerable trade, on the Gulf of Venice. *Ravenna* was anciently a seaport, but is now removed three miles from the sea, by the extension of the land.

The little REPUBLIC OF ST. MARINO occupies a mountain and a surrounding district of 40 square miles, in the Roman territory. There are seven thousand inhabitants, of a simple, industrious character, who have maintained an independent government for 1000 years.

SARDINIA.

29,000 sq. ms. 4,000,000 Inhab. 138 Inhab. to a sq. m.

The *continental portion* of this kingdom is enclosed on three sides by the Alps and the Appenines, which give it an irregular *surface*, and render the *scenery* more sublime, and the *climate* colder, than in Southern Italy. On the east it descends gradually into the beautiful plains which form the basin of the Po. In Piedmont, the *soil* is very fertile, and well cultivated. The plains produce rice, maize, and other grains, and the hills are covered with vineyards and olive-yards. The pastures are very rich, and grazing is an important branch of their *husbandry*.

Savoy is a rugged province, resembling Switzerland in its character, and lying among the loftiest of the Alps, near Mount Blanc and Mount Cenis. The irregularity of the surface renders *cultivation* very difficult, and it is naturally the poorest country in Europe. The *Savoyards* are poorly instructed; but their industry, frugality, and sobriety, enable them to gain a comfortable subsistence.

The mountains of Sardinia are very rich in *minerals*. *Agriculture*, as already mentioned, is well conducted. There are some *manufactures* of value, and the *commerce* of Genoa is important. Industry is a more common quality than in the south of Italy; and efforts are now made to promote instruction among the people. With these advantages, this kingdom holds a higher *rank* than the states in the south of Italy; and unlike them, is improving in its condition.

TURIN, the capital of the Sardinian monarchy, is a handsome city, in a fine situation. It is distinguished for its manufactures of silk.

Genoa has long been a flourishing maritime city, and probably surpasses any other port of Italy in the amount of its commerce. *Nice* is on the shore of the Mediterranean, in the south-western corner of the kingdom It is so sheltered by the Alps that its climate is remarkably salubrious, and it is often resorted to by invalids. *Alexandria* is a large and well-fortified town of the interior.

THE ISLAND OF SARDINIA is generally fertile, and capable of producing in abundance all the vegetables of the Warm Regions. Even cotton, sugar, and coffee might be cultivated in the valleys. But agriculture is in a wretched state, from the ignorance of the people, and the oppression of the wealthy. Extensive tracts in the interior are entirely waste; and others more extensive are covered with forests, and abound in wild animals.

The inhabitants of the towns and sea-coast resemble other Italians. Those of the interior are shepherds, in a half-barbarous state, clothed in leather and goat skins. They acknowledge no law, and are accustomed to go armed, to protect themselves from the banditti of the mountains.

CAGLIARI and *Sassari* are the principal towns. The former is the residence of the viceroy, and a place of considerable commerce.

LOMBARDY.

This portion of Italy, now belonging to Austria, and styled the Lombardo-Venetian kingdom, has long been celebrated for its rich, well watered, and highly

cultivated *plains*, and is deservedly *called* the garden of Europe. Its *climate* is severe in winter, but so hot in summer as to produce rice.

The *people* are among the most industrious in Italy. *Agriculture* is conducted in the most skilful manner. *Manufactures* are in a thriving state, and the *commerce* with the surrounding countries is extensive and profitable. This country is also *distinguished* for the state of literature and arts, and is one of the most flourishing portions of Italy. Its towns have been described under the head of Austria.

DUCHIES OF TUSCANY, MODENA, PARMA, AND LUCCA.

All these duchies, except Lucca, are dependent on Austria.

TUSCANY is probably the most prosperous among the states of Italy. Its *government* is absolute, but mildly administered; and free from much of the gross corruption prevalent in the other states. Its *territory* is small, but fertile, well cultivated, and thickly inhabited. Olive-yards and vineyards are numerous.

The *people* are generally industrious and enterprising, and *commerce* and *manufactures* are in a flourishing state. The celebrated Leghorn hats are made in this duchy, and employ large numbers of women and children. There is an air of comfort and neatness among the *peasantry*, which is not seen in the south of Italy; and the same wretched poverty is not visible here, which is so conspicuous in Naples.

FLORENCE, the capital, is one of the principal cities of Italy, and one of the handsomest in Europe. It is distinguished as a seat of science and arts. Its manufactures and trade are considerable.

Leghorn is one of the most flourishing seaports of Italy, and has an extensive commerce, especially with the ports of the Levant and of Africa. *Pisa* is an ancient and decayed city, thinly peopled. *Sienna* is also an ancient city, and the seat of a university.

The little island of *Elba*, which belongs to this duchy, is fertile and salubrious. It is best known as the temporary residence of the late Emperor Napoleon.

MODENA, PARMA, and LUCCA, are very small states, resembling Tuscany in their general aspect, character, and state of improvement.

MODENA is governed by the Archduke Francis, an Austrian Prince, who is also heir to the duchy of Massa Carara, after the death of the present Duchess. *Modena*, the capital, has a university with a fine library.

PARMA is possessed by the Empress Maria Louisa, the widow of Napoleon. The duchy gives name to the celebrated Parmesan cheese. *Parma*, its capital, has a university, but not of much celebrity.

LUCCA belongs to the Infanta of Spain, and her heirs. The capital city, *Lucca*, has a university, and is celebrated for its baths.

IONIAN ISLES.

The islands on the western coast of Greece form a republic under the protection of Great Britain, styled the United States of the Ionian Isles.

Cephalonia is the largest of these islands. CORFU is the seat of government. *Zante* is remarkable for its fertility and its beautiful scenery. The small, rocky, but celebrated island of *Ithaca* is among these.

The *inhabitants* are a mixture of Greeks and Italians, ingenious and active in their character. They *export* considerable quantities of wine, oil, oranges, lemons, and dried fruits. The *government* resembles that of England, with a commissioner deputed by the king at its head.

GREECE.

16,000 sq. ms. 635,000 Inhab. 40 Inhab. to a sq. m.

A portion of the Ancient Greece has now become independent of Turkey, and *comprises* the peninsula of the Morea, and the province of Livadia, together with Negropont, and several smaller islands. It contains many *remains* of splendid ancient buildings.

The *surface* of the main land is beautifully diversified with hills and mountains and valleys; and sometimes spreads into extensive plains. The *climate* is generally mild and delightful, and the *soil* rich in grain, cotton, and the fruits of the Warm Regions—but both vary with the elevation and face of the country.

The *Greeks* are lively, intelligent, and eager for knowledge and improvements. They have founded *schools* and *colleges*, and are rapidly rising from the igno-

rance and degradation produced by their subjection to the Turks. They are among the most *commercial* people of the Mediterranean. The country was laid waste by the late war; and *agriculture* and *manufactures* are in a low state.

ATHENS, once so celebrated, but now reduced to a village, is selected as the capital of Greece.

Nauplion, or *Napoli de Romania*, the late capital, is a fortified and important place with a small population. *Tripolitza* was razed to the ground by the Turks. *Patras* is a small place of great commercial activity. The modern *Athens* is a poor village, at the foot of the hill on which the magnificent ruins of the ancient city stand.

Negropont is a large island, separated from the main land by a channel, in some parts only 600 feet wide. The central regions are mountainous, but the rest is fertile.

The islands on the European side of the Ægean Sea, are called the *Cyclades* and *Sporades*, most of which belong to Greece. Among these are *Andros*, one of the largest; *Paros*, celebrated for the beautiful Parian marble. *Antiparos*, remarkable for its grotto; and *Santorini*, which bears the mark of volcanic origin.

Hydra is a small, rocky island, whose inhabitants have become wealthy by commerce. Its capital, of the same name, is the largest and most beautiful city of Greece.

TURKISH EMPIRE.

The Turkish Empire comprises Turkey in Europe and Turkey in Asia, divided from each other by the Grecian Archipelago or Ægean Sea, and the Sea of Marmora, but very similar in climate, productions, and the character of the people.

TURKEY IN EUROPE.

180,000 sq. ms. 9,500,000 Inhab. 53 Inhab. to a sq. m.

Turkey in Europe was the Ancient Greece, and still abounds in the ruins of temples and other *remains* of classical antiquity. Its *surface* is mountainous, interspersed with beautiful and fertile valleys. The *soil* yields wheat, cotton, rice, tobacco, vines, &c. in profusion, and almost without cultivation. The *climate* is various in different parts, according to their elevation, but it is generally delightful, as described under the head of the Warm Regions.

The *Turks* are grave, honest, and hospitable in their intercourse with strangers; yet haughty, superstitious, revengeful, and vicious in their habits. Indolence is their most striking trait. They despise and neglect *agriculture;* and some of the most fertile regions of the globe are hence left comparatively desert. *Manufactures* also are generally at a low ebb. The *commerce* of Turkey is considerable, and is chiefly carried on by the ships of other nations.

CONSTANTINOPLE was the ancient capital of the Roman Empire. It is now the capital of the whole Turkish Empire, and the third city in Europe in population. It has a fine harbor, and is frequented by the ships of many nations.

Adrianople is the second city in importance, and was formerly the metropolis of the Turkish Empire in Europe. *Sophia* holds the next rank. *Belgrade* is noted for its fortifications, and forms the frontier post, and military deposite for the northern portion of the empire. *Bucharest* is a flourishing town. *Jassy* is the capital of Moldavia and the residence of its prince, or hospodar. *Salonica* is the next town to Constantinople in commercial importance.

The Ægean Sea is studded with numerous islands, some of which still belong to Turkey.

The largest is *Candia*, the ancient Crete, which lies across the opening of this sea. Much of it is covered with rocky mountains, but it has a large portion of fertile soil and a fine salubrious climate. Candia, the capital, is a commercial place. The most northern island is *Mitylene*, the ancient Lesbos.

Scio, or Chios, is about 100 miles in circumference. It has a rocky, mountainous surface, but a fine climate, and is celebrated for its wine and fruits. *Samos* contains some of the finest remains of antiquity. *Patmos* is a sterile rock, distinguished as the place where the apostle John wrote the Apocalypse.

Rhodes is celebrated for its ancient commerce and naval power. Its climate is delightful; and the soil might be made very productive, if a better government encouraged industry.

THE ISLAND OF CYPRUS, on the south coast of Asia Minor, may properly be mentioned in this connection. It is the most important island of the Levant. It was once distinguished for its fertility and population, and its wine is still celebrated.

ASIA.

16,000,000 sq. ms. 470,000,000 Inhab. 30 Inhab. to a sq. m.

THIS largest and most populous division of the world, has been the scene of the most important events in its history—the creation of mankind—the renewal of the race after the deluge—and the death of the Savior. It is one of the richest portions of the globe, and has long supplied other countries with the most valuable productions of the vegetable and mineral kingdoms.

The physical geography of Asia is described, page 104 to 111. The southern portions belong to the Equatorial Regions—the northern to the Cold and Frozen Regions, as described under these heads, and the middle to the Tropical and Warm Regions, with the exception of the lofty, cold table-land of Tartary and the northern parts of China, mentioned ¶ 713. The Physical Chart will exhibit the lines of division more accurately than a description.

The Government, Religion, and state of Civilization of different portions are very various, and will be found in the Chart of the Inhabited World, and the corresponding articles. The state of Learning is described, page 196–7—of instruction, ¶ 1080–7—of Literary Institutions, ¶1130–6—of Agriculture, page 224–25—of Roads, ¶ 1212—of Cities, ¶ 1235–6—of Manufactures and Commerce, in various parts of those articles—and of National Power, ¶ 1285.

TURKEY IN ASIA.

500,000 sq. ms. 11,000,000 Inhab. 22 Inhab. to a sq. m.

Turkey in Asia *comprises* the ancient Asia Minor, Syria, and the Holy Land, the scene of most of the transactions recorded in the Scriptures. It presents numerous *remnants* and memorials of antiquity, of deep interest.

The *surface* of Turkey in Asia is much diversified. Lofty chains of mountains are divided by deep and extensive valleys. Some portions are covered with *forests*, and others in the south are desolate wastes and sandy *deserts*. The *climate* is like that of European Turkey, varied in some parts by the elevation of the ground.

The general character of the *Turks* is similar to that already described. There are numerous wandering tribes of *Turcomans* among the mountains, in a state of barbarism, who claim the right of plundering all that pass through their territory, and invade and rob the inhabitants of the plains.

The state of *agriculture* is more wretched, if possible, than that of European Turkey. *Manufactures* are in a low state, and the celebrated Turkish carpets, leather, silks, and Damascus sword blades, are the chief articles made for *exportation*. Trade is carried on almost entirely by Armenian and Greek *merchants*.

Aleppo, the capital of Syria, was a large and flourishing city, but in 1822 it was entirely destroyed by an earthquake.

Damascus is beautifully situated on the River Pharpar. It is the resort of caravans from Persia and India, and the seat of considerable manufactures and trade.

Smyrna is the chief port for foreign commerce. Its harbor is filled with vessels of all nations. *Bursa* is celebrated for its warm baths. *Acre*, and *Jaffa*, the seaport nearest Jerusalem, were noted for the attacks of the French, under Buonaparte.

Bagdad, the ancient seat of the Caliphs, is the emporium of the Indian, Persian, and Arabian commerce. Its appearance is mean, and its heat in summer is scorching. About 50 miles south of Bagdad, on the Euphrates, are the ruins of the ancient Babylon, consisting of a few vast, but shapeless masses of brick.

Jerusalem is associated with all that is venerable and dear to Christians. Many memorials of the great events transacted here still remain; and the city possesses something of its former magnificence. It is the resort of numerous Christian pilgrims, who suffer every species of exaction and oppression, from the Turkish government.

PERSIA.

480,000 sq. ms. 11,000,000 Inhab. 24 inhab. to a sq. m.

This ancient and celebrated country has scarcely the shadow of its former greatness.

It *consists* chiefly of barren or desert plains, crossed by ridges of mountains, interspersed with salt lakes, and traversed by a few streams, some of which are lost in the sand. The only *fertile portions* are in the vales of the Euphrates,

and other rivers. The provinces *on the Caspian* are more productive than the rest, but have a very unhealthy air. The *climate* is generally warm and dry; but varies, as already described, from extreme heat to extreme cold. The *productions* are also various. The rich valleys furnish almost all that are valuable. The orchards abound in fine fruit, and the moist regions with delicate flowers.

The *Persians* are chiefly resident in the valleys. They are gay, polished, and hospitable; but destitute of industry and enterprise. The mountains and deserts are occupied by the *Iliats*, or wandering shepherds, who have plundered and desolated many tracts that were formerly cultivated and fertile.

Agriculture is discouraged by the incursions of these robbers. *Manufactures* are carried on to some extent. *Commerce* is scarcely attended to. Persia has no army of any consequence, except the cavalry of the mountain tribes, who engage in war for the sake of plunder. It has been protected from conquest by the wide deserts on its borders, more than by its own strength.

ISPAHAN was the ancient capital of Persia, and is still the first commercial city of the empire. It was formerly of immense size, and the principal mosques and palaces are now very grand; but its walls are levelled with the ground; its suburbs deserted, and a traveller may ride through it for miles, and see nothing but ruins. *Tauris*, another ancient capital, is also reduced.

TEHERAN, the modern capital, is a new city, inhabited by the king and his court and army during the winter, but having only a small permanent population

Shiraz is considered the second city in the kingdom. It has extensive commerce, and is celebrated for its delightful climate, and beautiful environs, as well as for its colleges and learned men. *Bushire* and *Bassorah* are the principal seaports of Persia; but are small places, of a mean appearance.

EAST PERSIA.

410,000 sq. ms. 14,000,000 Inhab. 34 Inhab. to a sq. m.

East Persia *comprises* the country of Beloochistan on the coast and the kingdom of Afghanistan in the interior, divided into the provinces of Cabul, Candahar, Balk, Herat, and Segistan. Cashmere, which formerly belonged to Afghanistan, is now possessed by the Seikhs.

The *surface*, *soil*, and *climate* of East Persia are much varied. The *greater part* of it is overspread with barren, parched wastes, like those of Persia. No *river* more than two feet deep is found in a course of 1800 miles, from the Indus to Persia. Some parts are crossed by mountains and table-lands, and the country generally ascends towards the Himmaleh Mountains. Yet here, in the midst of scorching heats, we find tracts so *elevated* that the winters are severe, and the plants of Europe flourish.

The *soil* is generally barren, but in some parts it is well watered and productive. The valley of *Cashmere* is celebrated for its beauty and fertility.

The *Afghans* and the *Beloochees* resemble the Arabs in their bold, warlike character, and roving habits. The *Brahoos*, a part of the inhabitants of Beloochistan, are a mild, industrious and peaceful race. *Agriculture* and *manufactures* are little attended to. The shawls of Cashmere, however, are celebrated for their unrivalled beauty. The principal *trade* of Afghanistan is in horses. The whole country is thinly settled. The union of the different parts of this kingdom is very feeble; and the Afghans are only *powerful* from their superior courage and activity, and the weakness and indolence of their neighbors.

Cabul is an ancient city, but mean in its appearance. It has extensive trade with Tartary, Persia, and India. *Peshawer* is one of the residences of the king of Cabul. It is a large city, and the resort of people from all parts of the East. *Herat* is one of the most important cities of East Persia, and has a very extensive trade. *Candahar* has long been celebrated for its commerce. *Kelat*, the capital of Beloochistan, is a populous city.

INDEPENDENT TARTARY.

7,000,000 Inhab.

Independent Tartary is *occupied* by a number of tribes, who are *subject* to no foreign power, and have no common head. It is *bounded* on three sides by mountains and deserts, and on the fourth by the Caspian Sea. Its *surface* is in some

parts level and barren; and in others diversified and fertile. Its *climate* is that of the warm and dry regions already described.

The *inhabitants* are of the European race. They are divided into barbarous and half-civilized; and some seem to be in an intermediate *state of society*. *Agriculture* is little practised. There are some *manufactures*, and a few of very fine articles. The care of flocks, horses, and camels, occupies the people, and a settled life is the abhorrence of most of them.

This country presents the *memorials* of former civilization, in the ruins of cities and ancient buildings. It has still some *towns* of consequence.

Bukaria, or *Bokharia*, is a large city, and a considerable place of trade. It contains many colleges for instruction in the Mahometan law. *Samarcand* was formerly a celebrated seat of science; but retains little of its ancient splendor. *Khojund* is larger than Samarcand. *Koukan*, the residence of a sovereign, is superior to either.

CHINESE EMPIRE.

5,500,000 sq. ms. 180,000,000 Inhab. 33 Inhab. to a sq m.

The *Chinese or Tartar Empire*, comprises China, Chinese Tartary, Tibet, and a few dependent territories. Its extent is great, and its population far greater than that of any other empire in the world.

CHINA.

1,500,000 sq. ms. 150,000,000 Inhab. 100 Inhab. to a sq. m.

The *surface* of China is traversed by the branches of the Altaian Mountains in the western parts, and bounded on the west by the great table-land of Tartary. On the north, it is divided from Tartary by the celebrated Chinese wall, erected in vain to defend the empire against the Tartars. This is so broad as to admit several persons to ride abreast, and extends 1500 miles in length, over lofty mountains and considerable rivers.

The *inland navigation* of China is extensive and important. The *soil* of so extensive a country must be very various. It reaches from the Hot to the borders of the Cold Regions, and has every corresponding variety of *climate* and *productions*; which renders it in some degree independent of other nations. Its *population* is very dense, and is estimated by some at 330 millions.

The *Chinese* are deficient in invention, but remarkable for their skill in imitation, and their patient industry. Great attention is paid to *agriculture*, and no ground is left waste. *Manufactures* are numerous, and many of them excellent. *Commerce* is carried on to a limited extent with the eastern coast and islands of Asia; but the principal trade is with the ships of foreign nations, in tea, silks, cotton, and porcelain. Tea is a *peculiar product*, which is exported to a large amount to civilized countries. China abounds in large *cities*, but we know only the names of most of them. The number of walled towns is said to be 4,000.

Pekin (or the *northern court*) is probably the most extensive and populous city in the world. It is the residence of the emperor, whose palace forms an important section of it. It is divided into two portions; the Tartar and the Chinese city.

Nankin, the former residence of the emperor, is the second city of China. It is distinguished for its manufactures, especially of the cotton cloth called nankeen. It is also remarkable for a tower covered with porcelain, 200 feet high. *Canton* is the principal port of China, and the only one at which Europeans and Americans are allowed to trade. Foreigners are not permitted to enter the walls, but remain in the suburbs. All these cities probably exceed London in population. *Macao* is a Portuguese town on an island, in the Bay of Canton. It is the only settlement allowed to Europeans.

Formosa is a large island on the coast, with a fine climate and fertile soil; a part of which is possessed by the Chinese.

Hainan is an island of considerable extent, enriched with mines of gold. A part of it is subject to China; and the rest is possessed by an independent people.

The Loochoo Isles are a cluster of 36 islands, imperfectly known; only one of which, the Great Loochoo, is of large size. The coast is surrounded with

coral reefs, but has some excellent harbors. The soil, climate, and scenery, are remarkably fine. The people are a different race from the Chinese, and distinguished for honesty and hospitality. Agriculture is conducted with neatness.

CHINESE TARTARY.

2,000,000 sq. ms. 6,000,000 Inhab. 3 Inhab. to a sq. m.

The greater part of Chinese Tartary is *situated* on the central table-land of Asia, enclosed between the Himmaleh and the Altaian Mountains, and the Belur Tag. Much of it is a sandy *desert;* and the whole tract is so cold and dry from its elevation, as to be ill adapted to *agriculture*. Some parts of it however are fertile.

It has been little *explored* by Europeans. It seems to be *inhabited* almost entirely by wandering tribes, who live in tents of felt, and *subsist* by grazing. They have the usual *characteristics* and habits of barbarous nations. The eastern portion, or Mandshuria, *contains a number of cities*, whose names only are known, and is more fertile and civilized.

Chenyang is the capital of the Mandshur Tartars on the east, and contains a palace for the Emperor of China. *Yarkund* is the chief emporium of trade in the western part. *Cashgar* is the residence of the Chinese viceroy.

TIBET.

12,000,000 Inhab.

Tibet lies between the Himmaleh Mountains and the table-land of Tartary. It is one of the most *elevated* countries on the globe, and the centre of the Asiatic ranges. The general *aspect* is that of an assemblage of mountains and deserts. Its *limits* are not well ascertained. Its *government* is tributary to China.

The cold of winter is so intense, and the *air* so dry, that the people preserve their meat through the winter without salt. The *climate* is uniform and healthy. Its extreme dryness renders *vegetation* scanty, except in the period of the rains. In some parts, however, large herds of *cattle* are fed in the pastures, and wild animals and wild fowl are remarkably numerous. *Wheat* is raised with difficulty.

Like many other barren countries, Tibet is rich in *minerals*. It is *distinguished* as the seat of the Grand Lama, the object of idolatrous worship throughout a large part of Asia.

Lassa is the capital, and the residence of the Lama. Its appearance is that of a great collection of temples, some richly ornamented; and it is crowded with worshippers from all parts of Asia. It is also the residence of the Chinese viceroy.

JAPAN.

270,000 sq. ms. 15,000,000 Inhab. 55 Inhab. to a sq m

The Empire of Japan *includes* the islands of Niphon, Jesso, Kiusiu, and others smaller, which are adjacent. The general *aspect* of these islands is rugged and irregular. The narrow *valleys* are the principal regions of fertility. Some of the *mountains* are so lofty as to be covered with perpetual snow. The *coast* is rocky and precipitous, surrounded with shallows and whirlpools, and subject to storms, which render the *navigation* dangerous. The *climate* is liable to extremes of heat and cold. The nature of the country renders *earthquakes* frequent. The chief natural riches of Japan are its *minerals*, particularly gold, copper, and sulphur.

The Japanese are remarkable for their ingenuity and *industry;* and *education* is very general among them. They are more advanced in *civilization* than any other nation of Eastern Asia. *Agriculture* is attended to with peculiar care; and every spot which admits it is tilled. There are few *quadrupeds*, either domestic or wild. The *manufactures* of the Japanese are numerous. Their work in metals is excellent; and their varnished ware, called Japan, has not been rivalled.

The Japanese refuse to *trade* with any other nation than the Dutch and Chinese, and will receive ambassadors from no other. They do not allow foreigners to examine the country, and our *information* is therefore defective in many respects. The *wealth* of Japan appears very great.

Jeddo is the capital of the empire, inhabited by the king, and by a great num

ber of princes from the provinces, who are compelled to reside here half the year. It is a magnificent city, the seat of flourishing manufactures and extensive trade.

Meaco was the ancient capital. It is still the residence of the Dairo, or spiritual emperor, and the ecclesiastical and literary capital of the empire. It is also distinguished for its manufactures and commerce. *Nangasaki* is a large and commercial seaport on the island of Kiusiu. It is the only place at which the Dutch are permitted to trade, and even here, they are subjected to the most humiliating and vexatious restraints.

ARABIA.

1,000,000 sq. ms. 12,000,000 Inhab. 12 Inhab. to a sq. m.

Arabia is a region of *deserts*, traversed by ridges of *mountains*, and scarcely watered by a single *stream*. It was here that the Israelites wandered forty years, and were fed with manna. The whole *coast of the Red Sea* is a desert plain, called the Tehama, extending to the mountains. The *valleys* are the only well-watered and fertile regions. The province of *Yemen*, in the south-west, is highly cultivated and productive. The *climate* of Arabia is intensely hot on the plains, and cold on the mountains. It *produces* the fruits of the Torrid Zone in abundance.

The *Bedouins*, or wandering tribes of Arabs, inhabit the interior, and are distinguished for their hospitality towards those who visit them, and their lawless habit of plundering all others. They have little communication with those around them, and derive subsistence from their herds of camels, horses, and asses.

The inhabitants of the coast are more advanced in civilization. *Agriculture* is very rude. *Manufactures* are few and imperfect. The Bahrein Isles of the Persian Gulf have a *pearl fishery* of considerable value. A constant *trade* is carried on by means of caravans of camels across the desert; but of course very limited, from the mode of conveyance. The *horses* of Arabia are so noted for swiftness and fire, that great numbers are exported. The *coffee* and *gums*, frankincense, myrrh, &c. of this country, are also much esteemed.

MECCA, the birth-place of Mahomet, is regarded as the capital, and is a well built city. It occupies a narrow valley, in the midst of a rocky and barren country. It contains the famous Caaba, and derives great wealth from the concourse of pilgrims who visit it, from every part of the Mahometan world. *Jedda*, or Jidda, is its seaport. *Medina*, is a neatly built town, only celebrated for the tomb of Mahomet. The mosque which contains it is magnificent, supported by 400 columns of black marble, and lighted by 300 lamps continually burning. *Sana* is considered the largest and most populous city of Arabia. *Mocha* is the chief seaport of Arabia, and the seat of its trade with Europe. Its coffee is particularly celebrated.

INDIA.

India *comprehends* the two peninsulas of Southern Asia, which are east of Arabia, divided by the Ganges, into India within the Ganges, or Hindoostan, and India beyond the Ganges, or Farther India.

Both the peninsulas of India are *remarkable* for the number and size of their rivers, whose waters and inundations, united with the heat of the climate, make them the most fertile countries on earth.

The term *East Indies*, is also used very commonly for the whole of south-eastern Asia, including China and the Asiatic Isles.

HINDOOSTAN.

1,000,000 sq. ms. 120,000,000 Inhab. 120 Inhab. to a sq. m.

Hindoostan is an extensive and beautiful country, "the pride of Asia and the garden of the world." Most of it is an immense *plain*, furnished with numerous streams from the snows of the Himmaleh on the north. Some parts, however, between the Ganges and Indus, are *desert*. Extensive tracts of *marsh*, called *jungles*, are also numerous, which are so hot and moist, as to produce only canes and thick under-wood, the residence of wild beasts. Yet it probably contains a larger proportion of *fertile land*, than any other part of the globe of equal extent.

It has a tropical *climate*, which on the *table-land* of the Gauts, and the sides of the Himmaleh, is rendered temperate by elevation. It is thickly *populated*, b-

an indolent, degraded *people*. The Hindoos are excessively superstitious; mild and servile to superiors, cruel to women and inferiors, and described by the best informed travellers, as destitute of moral honesty. They are *divided* into several castes—the Bramins or priests, soldiers, merchants, and sudras or laborers. The different *castes* never intermarry, or even eat and drink together, and are devoted to particular employments. Those who by any neglect of superstitious observances lose their caste, are treated like beasts.

Their *agriculture* is imperfect, both in its instruments and operations. Rice is the *chief article* of cultivation, and is raised without any care but to cover it with water at the proper seasons. The cotton *manufactures* of Hindoostan have been long celebrated, for their fineness and beauty, although carried on with very rude instruments. In some articles they have never been rivalled. The *inland commerce* is very extensive; and conducted by the natives. The *foreign commerce*, chiefly in cotton goods, is carried on entirely by foreigners.

Hindoostan has no *political character* as a nation, but is occupied by a number of independent powers. *Major Rennel divides* the region between the mouths of the Ganges and Indus, into four portions. 1. Gangetic Hindoostan, or the north-eastern part watered by the Ganges. 2. Sindetic Hindoostan, or that portion watered by the Sinde or Indus in the west. 3. Southern Hindoostan, south of the River Kistna; and 4. Central Hindoostan, including the region intermediate.

Gangetic Hindoostan is possessed almost entirely by the British. They also occupy most of the coast of Coromandel, and part of that of Malabar, and the whole of *Southern Hindoostan* belongs to them and their allies. They have 53 millions of subjects in these territories, and 17 millions more belong to allied nations. All this population is governed by 30,000 Europeans, under the direction of the British East India Company.

Sindetic Hindoostan belongs chiefly to the Afghans of Cabul; and *Central Hindoostan*, extending from the western branches of the Ganges, to Southern Hindoostan, and from the Arabian Sea nearly to the Bay of Bengal, is occupied by the native tribes. The Mahrattas are the most numerous and powerful.

Hindoostan abounds in large cities. *Delhi*, the ancient capital, is situated on the banks of the Jumna. It was once very large and magnificent, but is greatly reduced. CALCUTTA, the capital of British India, is now the chief city of Hindoostan. It is a mixture of European palaces and Asiatic huts. It is admirably situated for commerce, on the Hoogly, an outlet of the Ganges, and has a very extensive trade with the interior, and with foreign countries. It is inhabited by merchants from every part of the world.

Madras is the capital of the British possessions in the south of India. It has a low, sandy shore, without a harbor, and the anchorage is unsafe. *Bombay* is the capital of the British possessions in western India. It is situated on a small island near the coast, and has extensive commerce, particularly with Persia and Arabia

Surat is among the most populous and commercial cities of British India. *Goa* is a populous city and territory belonging to the Portuguese. It is divided into the old city, the noted seat of the inquisition; and the new city, near the sea, in which the trade is carried on. *Pondicherry*, on the opposite coast, 85 miles south of Madras, is a French possession. It was once the most splendid European settlement in India; and is much better situated than Madras. It is now greatly reduced. Of the cities of the interior—*Poonah* is the modern capital of the Mahrattas; *Hydrabad* is the capital of the dominion of Nizam, and the chief market for diamonds; *Nagpour* is the capital of the kingdom of this name, and the metropolis of the Mahratta States on the east; *Lucknow*, on a branch of the Ganges, is the capital of the Oude; *Seringapatam*, is the capital of Mysore, celebrated for its fortress, and its siege by the British.

Benares is one of the most populous cities of India, and celebrated as a seat of learning and a sacred city. It is crowded with persons who come here to end their days, regarding it as the sure path to heaven. *Serampore*, at a short distance from Calcutta, is distinguished as the seat of the Baptist Mission, which employs a number of persons in translating and printing the scriptures in the languages of India.

NEPAUL AND BOOTAN.

NEPAUL is a kingdom of Hindoostan, on the declivity of the Himmaleh Mountains, consisting of a series of mountain chains, separated by deep valleys, and forming the steps from those lofty peaks to the plains.

The region on the southern borders of the kingdom, is level and fertile, but hot and pestilential. The greater part of the country is 4,000 feet *above the level of the sea*, and enjoys the *climate* of the south of Europe. It is abundantly *watered;* and under careful *cultivation* yields large crops of grain. The sides of the hills are terraced. The country is *populous*. KATMANDOO is the capital, situated in the valley of Nepaul proper.

BOOTAN is a small state, resembling Nepaul, which is tributary to Tibet.

CEYLON.

The Island of Ceylon is *celebrated* for cinnamon, a production almost peculiar to it. Its *coasts* are occupied by the British. The *interior* is the native kingdom of Candy, and was long saved from conquest by the pestilential nature of its climate; but it is now subdued, and the whole island is subject to Great Britain.

Ceylon is a *mountainous* island, traversed by ranges which rise gradually towards the interior. It is well *watered* and *fertile*, and produces the finest fruits, as well as spices. It is rich in *minerals*, and furnishes large quantities of the precious stones. The most extensive *pearl-fishery* in the world, is carried on upon its coast. The rent of it for one season amounted to five millions of dollars.

CANDY, the native capital, is near the centre of the island, a place of no beauty; and of little importance. COLUMBO is the British capital, and the chief town on the coast. It has no harbor. The climate is rendered pleasant by the sea-breezes.

Trincomaly is one of the most important harbors of India, and is the naval station for this part of the British possessions. It has little trade. *Point de Galle*, on the south-western extremity of the island, is more populous and commercial. *Jaffna*, on the northern extremity, has a salubrious climate, and is a favorite residence of Europeans.

CHIN-INDIA. (*Farther India.*)

Chin-India is *divided* into Assam, Burmah, and Malacca on the west; Siam in the middle; and on the east, the Empire of Anam or Tonkin, which occupies the whole of the Eastern part, including Tonkin, Cochin China, Siampa and Cambodia on the coast, and Laos in the interior. Chin-India is distinguished for the number of its streams and the fertility of its soil. It is also remarkable for the size, beauty, and docility of its elephants.

BURMAH, OR THE BURMAN EMPIRE.

279,602 sq. ms. 11,000,000 Inhab. 40 Inhab. to a sq. m.

The Burman Empire *includes* Ava, Pegu, and some smaller states, subdued by the Burmans. It *extends* on the north to China and Assam; on the south and east, its boundaries are not well known.

Its *soil* is remarkably fertile, and well watered. It has a more temperate and healthful *climate* than Hindoostan; and in the north the country is so *elevated* as to produce wheat.

The *people* are lively, intelligent and brave, and far advanced in civilization. In many of their *customs and laws*, however, they are excessively barbarous and cruel. Their *agriculture* consists chiefly in irrigation. Their *minerals* are valuable, especially the precious stones. Their *manufactures* are respectable, and their *commerce* important. The Burman *Empire* is the most powerful of Chin-India, and its government appears to be one of the most energetic in Asia.

The residence of the emperor was removed to *Ummerapoora*, in 1783; but in 1822, it was again transferred to AVA, four miles distant, and this city is now re-built as the capital.

Pegu was formerly a city of considerable size and consequence; but is now reduced. *Arracan* is the capital of the province of the same name, lately a part

of Burmah, now possessed by the British. *Rangoon* is the principa seaport o the empire, and the only place where Europeans are permitted to trade. *Prome* is a more populous city.

ASSAM.

Assam is an independent country, lying between Tibet and Bengal, containing about 60,000 square miles. It is a *fertile* region, *watered* by the Burrampooter, or Brahmapootra, and its branches. Its *climate* is very unhealthy. Its *mineral treasures* are considerable. It carries on *commerce* with Bengal. The *people* are unwilling to admit strangers into their country, and our information is therefore limited. *Ghergang* is the capital.

SIAM.

The Kingdom of Siam *lies* in an extensive vale, watered by the River Meinam, and enriched by its inundations. It is *bounded* by two ranges of mountains, which divide it from Burmah on the west, and Laos, and the empire of Anam on the east. Little is known of the *interior*. The land *on the river* is very fertile, and vegetation of every kind luxuriant; but the *back country* is mountainous and unproductive.

Siam is not very thickly *populated* The *people* are mild and courteous, but cunning and avaricious. They have been praised however for honesty, and for their affection and kindness to relatives. They are more advanced in *the arts*, than most of the nations around them. They have been robbed of some of their possessions by the Burmans.

Siam, called by the natives Juthia, is the capital, situated on an island in the Meinam. Its walls are extensive.

MALACCA.

The peninsula of Malacca, or Malaya, is *traversed* by a chain of lofty mountains, and covered with extensive forests and marshes, so that it is difficult to penetrate into the interior. Its *rivers* are numerous, but short. It has a tropical *climate*. *Fruits* are excellent; but *grain* is not raised in sufficient quantities for home consumption, and is imported from Bengal and Siam. *Northern Malacca* is in part dependent on Siam. The *southern portion* is occupied by independent tribes.

The principal *inhabitants* are the Malays, who are marked for the ferocity of their character, and the softness of their language. Piracy is their chief *occupation*. *In the mountains* there is a different race of savages, resembling the negroes of New-Guinea.

Malacca, the principal place, is a large town, possessed by the British. It is the seat of an Anglo-Chinese College. *Pulo Penang* is an island on the western coast, now occupied by the British as a place of trade.

EMPIRE OF ANAM.

From the accounts of recent travellers, it appears that the whole of *Farther India, east of Siam*, which was conquered by the Tonkinese, has been again subdued by the King of Cochin China, and united into one empire, called the Empire of Anam. The accounts are contradictory in some respects, and the state of things uncertain. But it is at least convenient to consider this empire as a geographical division, embracing Tonkin, Cochin China, Siampa, Cambodia and Laos

COCHIN CHINA.

Cochin China is a long plain, included between the sea, and a chain of mountains not far distant from it. It is extremely *fertile* in all the tropical productions The *sea-coast* abounds with gelatinous animals, regarded as delicacies, and furnishes the edible bird's nests, which are much valued in China. It is also rich in *minerals*. The *people* are lively, active, and intelligent. Both *agriculture* and trade are chiefly in the hands of the females. The *commerce* is principally with

China, to which it sends great quantities of sugar, and especially of candied sugar. The *French* are the principal European nation who trade here. The reigning prince is brave and intelligent, and pursues an enlightened policy. He has formed a respectable navy, has a large army, disciplined in the European manner, and has thus been able to subdue surrounding states.

HUE is the royal residence and has very extensive fortifications.

Faifo, about ten miles from the Bay of Turon, is the seat of trade for Cochin China.

TONKIN.

Tonkin is a kingdom surrounding the Gulf of Tonkin, formerly a part of the Chinese Empire.

It *consists of* a vast alluvial plain, traversed by numerous rivers, chiefly tributaries to the great river Saigong, on which all the principal towns are situated. Its *soil* is fertile in all the tropical productions; and even tea is raised, but of a quality inferior to that of China. It is surrounded on the north and west by *mountains*, and the breezes from them, and from the sea, moderate the heat of the *climate*.

The people have a more rude and vigorous character than the Chinese. *Commerce* cannot be carried on to much advantage with them, and is chiefly conducted by merchants from China and Siam. Silks and lacquered ware are their *chief articles of trade*, and are of a fine quality.

Cachao or *Kesho*, the chief city, is situated on the river Sankoi, about 80 miles from the sea. *Hean* is a considerable town, 20 miles below, where the Chinese merchants reside; and near the sea is *Domea*, where the Dutch and English usually stop.

CAMBODIA.

Cambodia *occupies* the eastern shore of the Gulf of Siam, and extends about 400 miles north. It is *watered* by a river of the same name, and has several fine harbors. The *coast* is in general flat, and overgrown with wood. The vale is bordered by mountainous districts on the east and west. The *soil* is extremely fertile. It *produces* many medicinal plants, among which is the peculiar coloring gum, called Cambodia or Gamboge. Wild *animals* are numerous, and cattle abundant.

The country is *inhabited* by a mixture of Cochin Chinese, Malays, Japanese, and Portuguese. They carry on very little traffic, except by land, with neighboring countries.

SAIGON, the capital, is on the River Dornai, a branch of the Cambodia River. *Cambodia*, or Levek, another large city, is situated on the river Cambodia.

SIAMPA.

Siampa occupies the coast of Farther India, between Cambodia and Cochin China. It is barren, intensely hot, and very unhealthy during a large part of the year.

The *inhabitants* appear to be of a peculiar race, allied to those of Laos and other kingdoms of the interior.

LAOS.

Laos is a distinct kingdom, north of Cambodia, extending from 12° to 18° of latitude, between Cochin China and Siam. The *accounts* given of this country are contradictory. All agree in describing it as poorly *cultivated*, and thinly *inhabited*. The *villages* are generally small, and most of the *people* live a wandering life. It is *traversed* by the River Mecon, or Cambodia. It is nominally *tributary* to the Empire of Anam; but it is so difficult of approach, and has so pestilential a *climate*, that its subjection is imperfect.

AFRICA.

11,000,000 sq. ms. 110,000,000 Inhab. 10 Inhab. to a sq. m.

AFRICA was once celebrated as the seat of science and art, but it is *now most* noted for its burning deserts—its fierce and noxious animals—and the ignorance and barbarism of its inhabitants.

Its physical aspect has been described, page 111 to 115. It lies chiefly in the Equatorial and Tropical Regions, and its climate and vegetable productions will be found under those heads, in the appropriate articles. Gold is the principal mineral of value in commerce. (See ¶ 826.)

The Religion, Government, and State of Society, are exhibited on the Chart, and illustrated in the appropriate articles. The state of Learning and Education is described, page 196—and ¶ 1080—of Agriculture, page 224—of Cities, ¶ 1237—of Manufactures, ¶ 1242–3, 1246, 1252—of Commerce, ¶ 1271, 1275—and of National Power, ¶ 1287.

NORTHERN AFRICA.

BARBARY STATES.

BARBARY *occupies* the northern projection of Africa, including Morocco, Algiers, Tunis, and Tripoli. It is *traversed* by the chain of Mount Atlas, and its prominent features have been described. ¶ 625.

The *northern declivity* is watered and fertilized by numerous streams, which are generally too short to be useful for navigation. The *climate* and *productions* are like those of Southern Europe. The *southern declivity* is called by the natives "the dry country." It has a fertile *soil*, but partakes of the heat and dryness of the Sahara.

Barbary is strikingly distinguished from the opposite shores of Europe by the number of its *noxious animals*. It is the residence of the scorpion and many serpents of peculiar venom, of the hyena, and the fierce Numidian lion; and the harvests are often destroyed by the myriads of locusts.

The predominant race in this country are the *Moors*, or Mahometan inhabitants of the towns, who resemble the Turks in character. The *interior is occupied* by the Brebers and Bedouins. The *Brebers* speak a distinct language, and appear to have been the original inhabitants of the country. They generally subsist by husbandry, and some of them are settled in villages. They are but partially converted to Mahometanism, and not entirely subject to the Moors. The Arabs or *Bedouins* resemble the inhabitants of Arabia, from whom they are probably descended, in their wandering, pastoral life, and lawless independence.

The character of the inhabitants produces a diversity in different parts of the country. The *interior*, occupied by the wandering tribes, is almost destitute of *cultivation*. Some of the tribes reside in subterranean *habitations*, excavated in the mountains, and so concealed as not to be discovered by a traveller. The state of agriculture is universally poor, as in Turkey. Wheat and barley are the principal crops. *Manufactures* are few and imperfect. The situation of the Barbary States has led the people to more enterprise and *commerce*, than is usual in Mahometan nations. They *supply Europeans* with wax, wool, and other raw productions, in exchange for manufactured goods; and *trade* with these to *Central Africa*, for gold, gums, and slaves.

Piracy was formerly the chief resource of the Barbary powers, and great numbers of captive Europeans and Americans were enslaved. So much were they once dreaded, that the United States, and most commercial nations of Europe, paid them an annual *tribute* under the name of a present, to secure their friendship, but their power is now reduced, and declining; and their depredations are chiefly confined to shipwrecked vessels. Their governments are described, ¶946, 948.

MOROCCO.

300,000 sq. ms. 14,000,000 Inhab. 46 Inhab. to a sq. m.

The empire of Morocco, or Marocco, (the ancient Mauritania,) the most western of the Barbary States, is *composed* of the kingdoms of Morocco, Fez, and Tafi-

let. The *soil*, though sandy, is generally fertile. *Pasture* is excellent; *grain* might be raised in sufficient quantity for exportation; and *fruits* are very abundant and fine.

The *government* is a despotism of the most absolute kind; the emperor practises such oppression as to discourage every species of industry. *Agriculture* is wretchedly conducted. The only *manufacture* of importance is that of Morocco leather. *Commerce* is limited by unwise restrictions, and is diminishing in value. The *population* of this empire has been stated at fourteen millions, but it is probably much less. Many of the tribes of *Brebers* and *Arabs* in the interior, are not subject to the control of the emperor.

MOROCCO is an extensive city, situated on a fertile plain, about twelve miles from the foot of Mount Atlas. It has lost much of its former importance. *Mogadore*, or *Souara*, is its seaport, and is the principal seat of foreign commerce for the empire. It is situated on a flat, barren plain of sand.

Fez, the capital of the kingdom of Fez, is a large city, the principal resort of the Brebers and Arabs for trade. Both this city and Morocco are great marts for the trade to Soudan. *Mequinez* is the largest city of the empire, distinguished for the superior politeness and hospitality of its people. *Tangier* is the place of trade with Spain and the south of Europe. *Ceuta* is a fortress possessed by the Spaniards, nearly opposite to Gibraltar.

ALGIERS.

90,000 sq. ms. 2,500,000 Inhab. 28 Inhab. to a sq. m.

Algiers occupies the site of the ancient Numidia. Its territory is thinly peopled, and in some parts desert. The soil is generally fertile, and the climate fine. It was governed by a despotic chief, usually chosen by the soldiery, and deposed, or executed at their pleasure.

The oppressive and precarious character of the government was a check to industry and prosperity; yet the Algerines have exhibited much enterprise. They formerly maintained a naval force for piracy, which rendered their name a terror to Europe; but their power and consequence were greatly impaired, by the repeated and successful attacks of the English and Americans, provoked by their outrages. The English compelled the Dey to stipulate, that he would no longer enslave any captive of Christian nations, and the French have taken possession of the country, and now hold it as a colony.

The coral fishery on the coast of Algiers is valuable, and has been chiefly in the hands of the French. The resources of the Algerine government have been principally derived from oppressive exactions at home, and robberies abroad.

ALGIERS, the capital, is one of the most celebrated seats of piracy. Its harbor is artificial, and is strongly fortified. Its commerce is considerable.

Bona is a seaport, with a good harbor, and some trade. It is one of the principal resorts of the coral fishers. *Constantina* is a large city of the interior, abounding in the remains of ancient art.

TUNIS.

70,000 sq. ms. 4,000,000 Inhab. 57 Inhab. to a sq. m.

Tunis (the ancient Africa Propria,) is one of the most *powerful* of the Barbary States. It *consists* chiefly of a large peninsula, stretching into the Mediterranean, within 100 miles of the coast of Sicily. Few countries are more highly favored as to natural *beauty* and *fertility*, than the cultivated tract extending 200 miles from the coast. It is *watered* by the River Mejerdah, whose *banks* are the most populous and best cultivated parts of the regency. The *western part* of Tunis is thinly inhabited. The *interior* is an arid and less fertile region, and is constantly occupied by tributary Arabs, who are otherwise independent.

The *government* of this country is administered more liberally, and *commerce* is more encouraged and more extensive, than in any other state of Barbary. The *inhabitants* are more attached to industry and trade than to piracy, and their situation is favorable for *commerce* with Europe. The *exports* are grain, and the fruits and products of the Warm Regions, together with the gold, gums, &c. obtained from Soudan.

TUNIS, the capital, is a large city, and about ten miles from the site of the ancient Carthage. It is situated on an extensive bay, which furnishes excellent anchorage

TRIPOLI.

100,000 sq. ms. 1,500,000 Inhab. 15 Inhab. to a sq. m.

TRIPOLI, (the ancient Tripolis, so called from its three chief cities,) is an arid, thinly *peopled* country, abounding in the *remains* of antiquity.

On the *coast* it is fertile; in some parts it is entirely *desert;* and generally affords but a scanty *subsistence* to its inhabitants. Its *climate* is salubrious, and its *productions* resemble those of Southern Europe. The *date* is extensively cultivated for food; and *domestic animals* are raised in considerable numbers for exportation.

It is said to be the most *civilized* of the Barbary States. Its piracies have been checked in the same manner as in others. Its *commerce* is of some importance

TRIPOLI, the capital, is a regular, well built city, more cleanly than others in Barbary.

BARCA, the ancient Lybia, is a country on the east of Tripoli, subject to its government. The coast is productive and well peopled. *Derna*, its capital, is noted for an expedition under the American General Eaton, in 1805, against the Tripolitan government.

The KINGDOM OF FEZZAN is a large oasis in the northern part of the Sahara, tributary to Tripoli. It is a tract of sand, producing no crops without artificial watering. Dates are the principal article of food. Few domestic animals but the camel can be sustained.

The people possess little energy of character, and are imperfectly acquainted with the arts. This kingdom is principally important as the centre of trade, for the caravans which cross the deserts. *Mourzouk*, the capital, is a small mud-walled town.

EGYPT

180,000 sq. ms. 4,000,000 Inhab. 22 Inhab. to a sq. m.

EGYPT was long *celebrated* as a seat of science, and its pyramids, obelisks, and temples, present some of the most wonderful monuments of human art. It is now reduced in all respects.

The *greater part* of Egypt consists of a narrow fertile vale, traversed by the Nile, and bounded on each side by barren rocks and mountains. The *soil* is general is so rich as to require no manure. The *agriculture* is of the simplest kind, the chief articles of produce being wheat and barley. In the Delta, rice is the chief grain, and with maize and lentils, forms the *food* of the inhabitants.

The *climate* is excessively hot in summer; but the air and temperature are delightful in the winter months. It is *peculiar*, in the extreme rareness of rain, and the atmosphere is almost constantly clear.

The greater number of the *inhabitants* of Egypt are Mahometans, and have the usual character of Mahometans. There are many of the *Copts*, or original inhabitants of the country, who are Christians. They are an ingenious people, almost the only class possessed of education, and are principally employed in public and commercial transactions.

There are a few articles of *manufacture*, but none of much importance. It has always been the channel of extensive *commerce* with the interior of Africa, which is carried on by large caravans. This country has been reduced to a very low state in arts and improvements. The present Pacha is a man of enlarged views and energetic character, who is in effect independent of Turkey, and is endeavoring to introduce the knowledge and arts of civilized nations into his dominions.

CAIRO exceeds any other city of Africa in magnitude and splendor. It is the resort of merchants from the whole of Western Asia, and the interior of Africa.

Alexandria is a place of considerable extent, but the greater part of its site is covered with the ruins of the old city. It is the chief place of trade between Europe and Egypt. *Rosetta* is a modern commercial town of some importance, on the western mouth of the Nile. *Damietta*, on the eastern branch, has an extensive commerce with Syria and Cyprus. *Siout* is the metropolis of Upper Egypt, and a place of trade.

Coseir is a small port, the seat of trade between Arabia and Egypt

WESTERN AFRICA.

SENEGAMBIA.

The region *lying* on the River Senegal and Gambia, and extending to their sources, is divided into a great number of small states, which have been grouped together under the name of Senegambia.

The *coast* is here flat and sandy. *East of this* is a region somewhat argillaceous, and very fertile, which is succeeded by a mountainous district. Senegambia is generally well *watered*. The *climate* and vegetable *productions* are such as belong to the Equatorial Regions.

The *principal states* are Cayor and Walloo, on the coast; Foota-Toro, Bondou, Bambouk, Foota-Jallo, Manding, and Karta, in the interior.

FOOTA-TORO is one of the most extensive and important kingdoms. It is well watered; much of it is fertile; and the population is dense.

BAMBOUK is a country of mountains. It produces large quantities of gold, and not only furnishes most of that which is carried down the Senegal and Gambia, but sends considerable quantities to the east and south. Many of its valleys are fertile.

FOOTA-JALLO is also mountainous, and has therefore a variety of climate and productions. *Teemboo*, its capital, is considered one of the largest cities in this portion of Africa.

The principal *tribes* of Senegambia, are the Jaloffs, Foulahs, Feeloops and Mandingoes.

The *Jaloffs*, who occupy the coast, are esteemed the most courageous tribe of Negroes in this region. The *Foulahs*, who are possessed of a number of kingdoms, are distinguished from other Negroes by their superior form and features; and have more of an olive complexion. They lead a pastoral life, and have a higher character for humanity, honesty, industry, and civilization, than any other tribe of this region. Both these tribes are chiefly Mahometans. The *Feeloops*, on the south of the Gambia, are a wild unsocial race.

The *Mandingoes*, are the most numerous tribe of Negroes in the western region of Africa; and are spread along the banks of the Niger, Senegal, and Gambia. They are gay, lively, inquisitive, and cunning. Many of them are Mahometans.

SIERRA LEONE, AND LIBERIA.

The district of *Sierra Leone* is distinguished for a colony formed by the British African Society, as an asylum for slaves recaptured, and a source of civilization and knowledge to Western Africa. It derives its name from the number of lions in the neighboring sierras, or chains of mountains.

It is *fertile* and *populous;* but *cultivation* has made little progress. Tropical *productions* abound, and the forests, fields, and rivers, furnish an ample supply of food, with very little labor. The *native tribes* have the general character of the African race. The colony has a *population* of 12,000, chiefly composed of liberated Negroes, taken from captive slave-ships. They are placed under the instruction of missionaries. Their *schools* and *churches* exhibit as interesting an appearance, as those of any country.

Freetown, the capital, is a small town, near the mouth of the Sierra Leone River.

LIBERIA is a settlement lately commenced at Cape Mesurado, by the American Colonization Society. It is designed as a place of resort for the free Africans and emancipated slaves of the United States. It contains about 2,000 inhabitants, and is in a prosperous state. *Monrovia*, the chief town, has a flourishing trade.

UPPER GUINEA.

The coast of Upper Guinea is *divided* into the Grain, the Ivory, the Gold, and the Slave Coast.

The *Grain Coast*, is so called from the pepper it furnishes, and is chiefly occupied by the Portuguese, who first began to trade here.

The *Ivory Coast* abounds in ivory; but has no good *harbor*. Boats meet the canoes, and exchanges are made at a distance from the shore, on account of the surf. It is *populous*, and thickly *settled* with villages. The *inhabitants* are said to be the most savage, thievish, and revengeful upon the African coast. They will not permit Europeans to reside in the interior.

The *Slave Coast* extends from Rio Volta to the Bay and River of Lagos. It is traversed by the two considerable *Rivers* Yakin and Euphrates, running parallel to each other and to the sea, and rendering intercourse very convenient. Of all the coasts yet explored, this is the best *cultivated*. The whole country rises gradually from the sea, is *covered* with luxuriant and perpetual vegetation, cultivated fields, groves, and innumerable villages. In industry and agriculture, the *inhabitants* appear to equal the Chinese.

The *Gold Coast* is situated immediately under the equator, and *furnishes* large quantities of gold in trade. The principal *kingdoms* are Dahomey, Benin, and Ashantee.

DAHOMEY, BENIN, ASHANTEE.

DAHOMEY is a productive and powerful kingdom. The most arbitrary forms of *despotism* are mild compared with those of this country, founded on an idolatrous veneration for the king. The *people* are peculiarly ferocious. The king's bed chamber is paved with skulls, and the roof ornamented with the jaw-bones of chiefs whom he has slain in battle.

Abomey, the capital, like other native cities of Africa, is merely a large collection of huts.

BENIN extends from Rio Lagos to Rio Formosa. It is well furnished with rivers and estuaries; but their banks are very unhealthy.

ASHANTEE is an extensive territory of Western Africa, immediately behind the states on the Gold Coast. Its name had scarcely reached Europeans, when its armies were lately seen descending to the coast, and subduing all before them In *military* skill and valor, in arts and intelligence, the *Ashantees* are decidedly superior to any other inhabitants on the Gold Coast, and it appears probable that the whole will fall under their dominion. Great *armies* assemble at a moment's warning, which furnishes evidence that the population is dense. The magnificence displayed in their *camp*, when visited by the English, and the dignity, and courtesy of deportment both of the king and his officers, indicated a degree of *civilization*, much superior to that of the surrounding nations.

The only instrument of *husbandry* among the Ashantees, is the hoe. They cultivate rice and the sugar cane. Fine *cotton* grows spontaneously, and tropical fruits are abundant. Their cattle are large, but their horses small. They are bad horsemen, and sometimes ride oxen. They have a loom like the European, and *manufacture* fine cloths with brilliant colors. They also work in metals and leather, with considerable skill.

Coomassie, the *capital*, is said to have a population of 100,000. The houses are well built and neat. The streets are all named, and a captain has the charge of each.

In all the kingdoms of Guinea, at the death of the king, a great number of his slaves are buried alive with him, or are massacred to attend him in the other world. *In Dahomey and Ashantee*, human sacrifices are made with a frequency, and to an amount scarcely paralleled; and the horrid scene is regarded as a pastime.

LOWER GUINEA.

CONGO, LOANGO, ANGOLA, BENGUELA.

CONGO is an extensive country south of the River Zaire. The *eastern* frontier is composed of lofty and rugged *mountains*, inhabited by the savage tribes of the Giagas, who make frequent and desolating incursions. The vegetable *productions* are abundant. Congo enjoys a happy exemption from scorpions, musquetoes, and most venomous *animals*. *Agriculture* is carried on with a rude iron hoe, yet the crops are excellent. *Mats* are the covering of their houses, their bedding, and their clothing. The people appear to possess less energy and reflection than most other

natives of Africa, but are lively, good humored, and hospitable in their disposition.

LOANGO is situated on the north side of the River Zaire, and extends more than 400 miles. The *climate* is said to be very fine, never subject to violent winds or hurricanes; and vessels may safely anchor on its coast. *Rain* occurs rarely, and is never violent, and *vegetation* is chiefly watered by heavy dews. The *soil* is generally very fertile. The *coast* is high, and the hills are covered with vegetation. The *lakes* abound with fish, and the *forests* with game.

ANGOLA is a part of Congo. It is *resorted to* only for slaves of the inferior order, of which 40,000 are annually sold, chiefly to the French.

BENGUELA is a region south of Angola, *inhabited* by a rude and barbarous race. The *air* is very unwholesome. Strangers are advised not to land; and those who survive attempts to reside there, resemble men coming from the tomb.

CENTRAL AFRICA.

Central Africa may be *divided* into two portions—Soudan, or Nigritia, comprising the kingdoms on the Niger; and the region south of the Jibbel Kumra, sometimes called Lower Ethiopia. The latter has been so little explored, that no account can be given of its geography.

SOUDAN, OR NIGRITIA.

The *region* lying *on the Niger* is so well watered by this stream as to render it fertile. Its *climate* is so warm, that it produces all the luxuries of the vegetable kingdom. Its *trees* are the largest known upon the globe; and its forests peculiarly majestic. It is *divided* into a number of small states, few of which have been explored, or even visited by white men. The *population* is chiefly composed of Negroes, more mild, but less active than their Moorish neighbors.

BAMBARRA is a large and powerful kingdom, bordering on Manding. It is generally *fertile*, and is *remarkable* for the shea, or vegetable butter-tree. The inhabitants are a mixture of Moors and Negroes. It appears to be *populous*, and has a considerable share of *commerce*. *Sego*, its capital, has 30,000 inhabitants. *Sansanding* is the seat of considerable trade, especially in salt.

TOMBUCTOO is described as an extensive and powerful kingdom. The *people* are intelligent, and considerably advanced in the arts. *Tombuctoo*, the capital, has been celebrated as the centre of commerce for Soudan, and the resort of numerous caravans from the eastern and northern coasts.

HOUSSA, east of Tombuctoo, is also a kingdom of importance. The *people* are intelligent, and have considerable skill in agriculture and manufactures.

KASSINA is east of Houssa, and tributary to it. It extends to the borders of Fezzan. The *people* are said to have some skill in the arts. They carry on *commerce* with the northern coasts. ASBEN is a country north of it, which seems to be included in its territories. *Agades*, its capital, is a place of great trade.

BORNOU is an extensive fertile tract; and one of the most flourishing states of this region. *Bergoo*, and *Baghermi*, are its tributaries. It has a considerable army, said to contain 60,000 cavalry. The *trade* is chiefly carried on by the merchants of Fezzan. The name of *Wangara*, signifying marsh, was formerly applied to a low, swampy region, supposed to absorb the waters of the Niger. It is now ascertained that there is a large lake in this region, called the Lake of Tchad. It has not been fully explored.

DARFUR and KORDOFAN fill up the interval between the kingdoms of Sennaar and Abyssinia, and Bornou. *Agriculture* is here the chief branch of industry, and wheat is raised. The people carry on a *commerce* with Egypt, and have considerable intercourse with Mecca. They are *ignorant* of every thing but the Koran, addicted to intemperance, and very dishonest. Their *caravans* often include 1000 men and 2000 camels. Their *king* is a great merchant. He is now tributary to the Pacha of Egypt. *Cobbe*, the capital of Darfur, is a considerable place, and well situated for trade. It is chiefly inhabited by foreign merchants.

NUBIA.

Nubia is an extensive country, lying south of Egypt on the Nile. It *consists* almost entirely of sandy and rocky deserts, where pillars of sand are frequently seen moving with the wind, and the pestilential simoom often blows. The immediate *banks of the* Nile, although above the level of the river, are rendered productive by irrigation. The water is raised by means of wheels. The eastern bank is the *most fertile.*

The *climate* is intensely hot in summer, but so dry that it is very healthy; and the plague is not known here.

Nubia is *divided* into a number of petty states, now subject to the Bashaw of Egypt. It is *inhabited* by numberless independent tribes—some carrying on trade in towns; others attending to agriculture; and a still greater number wandering over its wastes. There is a corresponding variety of *character*. The people of *Berber*, on the borders of Egypt, through whose territory every traveller passes, are of Arabian origin. They are noted for their intemperance, treachery, and ferocity. The *natives of Nubia* are more like Arabs than Negroes. They are in a barbarous state, but sustain a much better character than the Berbers. They are employed as porters in Cairo, and are esteemed for their honesty.

Dhurra, a species of large grain, and tobacco, are the principal *articles of cultivation.* There are *no fruit* trees except the palm. The principal *trade* of Nubia is in slaves. Five thousand are supposed to be brought hither annually, of whom one-half are sent to Arabia.

Dongola, on the Nile, is the capital of a petty kingdom on the west of Nubia.

In Nubia Proper, there are but few groups of houses that deserve the name of *towns. Ibrim* is a small place on a hill near the Nile. *Derr*, the usual residence of the kasheffs or chiefs, is now considered the metropolis. It carries on a considerable trade with Egypt in dates.

Suakem, on the Red Sea, is possessed by the Turks. It was formerly a place of great commerce; but is now supported only by the caravans which pass through it from the interior of Africa to Mecca and Arabia.

The splendid *remains* of ancient temples, form one of the most remarkable features of this region. They are peculiar in being generally excavated from the solid rock. The most magnificent yet discovered, is that of Ipsambul, between Syene and Ibrim.

SENNAAR.

Sennaar is *included* between Nubia on the north, Abyssinia on the south and east, and Darfur on the west. A great part of it is enclosed between the Nile, and its eastern branch the Taccazze, and occupies the *ancient Isle* Meroe, the centre of Ethiopia. It was a kingdom *formed* by a body of Negro invaders, who drove away the Arab inhabitants, but is now tributary to Egypt.

The surface is level, and remarkably fertile for some distance from the banks of the river. It is never *overflowed.* At the time of the rains it assumes a beautiful, verdant aspect; but soon after they cease, it becomes barren and scorched. There are many tracts which are perpetually *desert.* Dhurra is the principal grain in use. Sennaar produces few articles of *commerce;* but the people are extensively employed in the trade from the interior of Africa to Egypt.

The despot of Sennaar has an *army* of 14,000 Negro troops around his capital, who are called *Nuba.* KORDOFAN is tributary to Sennaar.

Sennaar, the capital, is a populous place of considerable trade.

Shendy is a trading town of 800 or 1,000 houses, and has many wealthy inhabitants. It is the largest in this part of Africa, except Cobbo and Sennaar.

ABYSSINIA.

Abyssinia is a mountainous country, but the elevations are not considerable, except on the borders. The *declivities* are gentle, and afford fine situations for tillage, and the erection of towns.

The *climate* is on the whole fine, from the coolness and purity of the mountain air. The *valleys*, however, are hot and unhealthy. The *soil* is very fertile. *Wheat* is raised in considerable quantities on the higher tracts; but a very small grain, called *teff*, is the common food of the people. The domestic *animals* are like those of Europe. *Bees* are every where raised, and honey is an important article of food.

The Abyssinians profess *Christianity*, but retain many Jewish rites and many Pagan and barbarous customs. They are generally ignorant and brutal in their *character* and manners. *It is common to eat* raw flesh, cut from the living animal, in its warm, palpitating state. *Agriculture* is extremely rude, and the plough is only a crooked branch or root of a tree. The most necessary *manufactures* are carried on, but very imperfectly. They have some *commerce*, both with the interior and with foreign countries, and send abroad gold, ivory and slaves.

The *government* is feeble, often resisted by its own officers, and by the savage tribes within its borders. Civil *wars* are perpetual, and human life is no more regarded than that of brutes.

The Gallas, on the south, have overrun a large part of the kingdom. Indeed it is now really divided into several independent states, of which the kingdom of Tigre is the principal.

GONDAR, the capital, is situated on a hill. It is generally mean in its appearance, but it has some fine buildings, erected by the Jesuits, during a period when they had much influence. *Axum* was the ancient capital, and has a splendid church. *Masuah* is mean in its appearance, but is the only place of foreign trade. *Adowa* is a town of importance as the seat of trade for the interior.

EASTERN COAST OF AFRICA.

This coast was *first visited* by the Portuguese, near the close of the fifteenth century, and is little known to any other nation. It is much to be regretted, that they publish no accounts of their discoveries and possessions. The *descriptions* given of this part of Africa are in many respects contradictory; and when all false or doubtful statements are rejected, little remains to be said concerning them.

The KINGDOM of ADEL is said to be a fertile country, and it is famed for myrrh and frankincense. It is *divided* among several tribes, continually at war with Abyssinia. *Zeila* appears to be the principal town.

AJAN is chiefly inhabited by Mahometans, and carries on a considerable trade in ivory, ambergris, and gold.

BRAVA is a little aristocracy which pays tribute to the Portuguese.

MELINDA is a Mahometan state, partially dependent on the Portuguese. The capital city, *Melinda*, has a beautiful situation and appearance, and contains many splendid mosques and Portuguese churches. It is *inhabited* by rich merchants, and the exports are various and valuable.

ZANGUEBAR is said to be a marshy and unhealthy country, abundant in elephants. It is chiefly *inhabited* by the Mocus, partly Pagans and partly Mahometans. The little Kingdoms of QUILOA, and MOMBAZA, were formerly subject to the Portuguese, but are now independent. The KINGDOM OF MOZAMBIQUE comprises most of the country subject to the Portuguese, extending from Cape Delgado to Cape Corrientes. The *soil* is luxuriant and fertile. There are wild *beasts* of various kinds, and the elephants are so fierce and destructive, that the inhabitants are obliged to kindle large fires round their fields, to prevent them from devouring the crops. The country is rich in *gold*, which is washed down by the rivers in great quantities, and is the chief article of commerce.

The city of *Mozambique*, the capital of all the Portuguese possessions, was once large, but is now much reduced.

The COAST OF SOFALA, lying between the River Zambeze or Cuama, and Cape Corrientes, is watered by that river, and by the rivers Sofala and Inhambane, whose names are also applied to the country on their banks.

MOCARANGA is a kingdom of the interior, which appears to be one of the most powerful on the coast. The *soil* of this country is said to be fertile, though exposed to great heat. The *mountains* in the interior are covered with perpetual snow.

SOUTH AFRICA.

South Africa is the region surrounding the Cape of Good Hope, and extends northward to the frontiers of Congo and Mozambique. The *Hottentots* near the Colony of the Cape, are in a lower state of civilization than any other people in Africa. More improvement is found among the Caffres, and still more in the Boshuanas, and other tribes of the interior.

COLONY OF THE CAPE.

Three successive ranges of *mountains divide* the Colony of the Cape, as described ¶ 639. The *plain next the sea* has a deep and fertile soil, well watered by numerous rivulets, covered with grass and a beautiful variety of shrubs and trees. *Rains* are frequent, and the *climate* mild and agreeable. The *second terrace* contains large tracts of arid desert; and the *third region*, called the Great Karoo, is destitute of almost every trace of vegetation, and unoccupied by men or animals.

Beyond the Great Karoo, at the foot of the Snowy Mountains, there is an excellent grazing country, where cattle are raised in large numbers for the Colony. The *settlement* is deluged with rain in the cold season, but it has scarcely a shower in the hot months, and is parched by a perpetual dry wind. The *changes* are frequent and sudden. The best of grain, wine, and fruits, for the supply of the colony, are *produced* within the distance of one to three days journey from Cape Town. *Potash* is made from a plant which grows in great abundance. *Salt* is formed in numerous salt lakes, by the mere heat of the sun. A large extent of ground is covered with natural plantations of *aloes*.

The *agriculture* of this colony is wretched, 14 or 16 oxen being used to draw an unwieldy plough, that only skims the surface.

The *Colonists* are generally ignorant; many of them approach the natives in their habits. Even the industrious *Dutch* here grow extremely indolent, and keep great numbers of Hottentot slaves, who have little else to do than smoke, eat, and sleep, like their masters. The British settlers, who have recently become numerous, have improved very much the state of society.

Cape Town is a place of some importance, and contains many good buildings. *Constantia* is celebrated for its wine of peculiar excellence. *Bethelsdorp* is a missionary station, chiefly inhabited by Hottentots.

NATIVE TRIBES.

Caffraria, or the Country of the Caffres, extends north from the Great Fish river, which separates it from the Colony of the Cape. The *Caffres* are a fine race of men, and have not a line of the African Negro in their countenance or person. Although in a barbarous state, they are superior *in intelligence and arts* to the tribes around them. Their *cows* are larger and handsomer than those of the Colony, and their *oxen* are remarkable for size and strength, and are used as horses. The men take care of the cattle, and the women till the ground. They cannot *count* beyond 100, and have not a vestige of *writing*. Their *language* is soft and harmonious.

The *Boshuanas* are a tribe who inhabit a large territory in the interior of South Africa, estimated from 10 to 15,000 in number. They are evidently of the stock of the Caffres. The *men* pursue hunting; the *women* and slaves taken prisoners in war, *cultivate the ground*.

The *Bosjesmans*, or Bushmen, a tribe of Hottentots, inhabiting the inaccessible mountains north of the Colony of the Cape, are among the most degraded people known. A deadly hostility has long been maintained between them and the Colonists, by a series of mutual injuries, plunders, and murders

They are *described* as the ugliest of all human beings, and dwarfish in size. They have no bonds of *society*. Each leaves his companions when he pleases. The stronger take the wives and property of the weaker. They have little *intercourse* with each other; their language is poor; and much of their conversation is carried on by *gestures*. They *raise* neither corn nor cattle. Roots, serpents, lizards, and insects, furnish them with *food* when they fail in hunting. Nothing disgusts their smell or taste, and they pass their nights in holes like beasts. They

live in a state of continual *warfare*, and plunder and destruction are their chief employments.

The *Corannas*, or Corans, north of the Bushmen, apply a little to agriculture. They have no fixed habitations. The richest man of the kraal is *the leader* of the party, and their spokesman on all occasions; yet he has no commanding authority. They are *distinguished* for training their oxen, which are attended with as much care, and used in the same manner, as horses among us.

In advancing towards the *interior* of Southern Africa, there is evidence of greater civilization. The *Matchappes* are much more improved than the nations south of them. They *manufacture* articles of iron and copper, till the ground, and construct their huts and clothing in a neat and skilful manner. Their capital is *Latakoo*, which was supposed in 1813 to contain 7,000 inhabitants. It was said that the tribe had more than a thousand outposts, or stations of persons attending to their cattle.

The *Mashows* succeed the Matchappes on the north. The *Marootzees*, north of the Mashows, seem to be still more advanced in arts. They obtain *iron* and *copper* from the ore, and work it with considerable skill. Their metallic articles are sent into all the surrounding country. They also make *pottery* with much skill and taste, and have some knowledge of painting. *Kurrenchani*, their capital, contains about 16,000 people.

The *Namaquas* and *Damaras* are two other tribes, on the shores of the Atlantic and the Orange River.

Their employments and *support* arise from their cattle; and they frequently endeavor to plunder each other. An affection subsists between parents and children, which is *unusual* among savages. Old age and infirmity are *common among them*, and appear therefore to receive attention, instead of leading to cruelty and desertion. *Strangers* also have been kindly treated among these tribes.

AFRICAN ISLANDS.

ISLANDS WEST OF AFRICA.

The Azores, or Western Islands, are nine in *number*, situated nearly in the middle of the Atlantic Ocean. They exhibit strong marks of volcanic *origin*, and are subject to earthquakes. (See ¶ 298—9.) They have a delightful *climate*, and a fertile *soil*, and wines and fruits are *exported* to a considerable amount. They are said to be entirely free from *venomous animals*.

The Madeiras. Madeira is the *principal island* of this group, which *belongs* to the Portuguese. It is well *watered* and *peopled*. Its *climate* is free from the scorching heats of summer, as well as the chills of winter. Madeira is principally *celebrated* for its excellent wines, which are exported by English merchants to a large amount. *Funchal* is the capital.

The Canaries are a group of lofty islands belonging to Spain, *famous for* their wines, fruits, and Canary-birds. *Teneriffe* is noted for its lofty peak, which rises far above the clouds. *Santa Cruz* is a large town, the commercial capital of the island.

The Cape Verd Islands do not enjoy the healthy *climate* or fertile *soil* of the Azores and Madeiras, and are chiefly *noted* for their exports of salt and hides. They belong to Portugal. The island of *Fogo* has a volcano. *Goree* is a small island, near Cape Verd, now subject to France.

Islands of the Gulf of Guinea.—*St. Matthews and Ascension* belong to Portugal. Ascension is an uninhabited rock, but is visited by ships to procure turtles. *Prince's Island* is fertile, and has a good harbor, and a considerable village on the northern shore. *Fernando Po* is a fertile island belonging to the British, and recently settled by them.

St. Helena is a rocky island, accessible only at a single spot, in a narrow valley or chasm, in which *Jamestown* is built. The inhabitants do not exceed 3000, and are supplied with grain and most of their provisions by the ships of the East India Company, whose property it is. It is celebrated as the prison and grave of Napoleon.

ISLANDS SOUTH OF AFRICA.

Kerguelen's Land is also called the Island of Desolation, on account of its sterility.

Amsterdam and *St. Paul's*, are frequented only on account of the seal-fishery. On the south-west is *Tristan d' Acunha*, which is covered with trees.

ISLANDS EAST OF AFRICA.

MADAGASCAR.

Madagascar is one of the most extensive and important islands in the world, *ranking* with the largest states of Europe, except Russia, in extent. It is intersected by a central ridge of *mountains*, which are rich in *minerals*. The country is generally well *watered* by the streams which descend from them, and luxuriant in the *productions* of the Torrid Zone.

The *inhabitants* are estimated at four millions, *divided* into a number of petty tribes of various races—Malay, Arabian, and African. Some of them are savage; others are acquainted with writing, and several of the arts of *civilization*. *One of the most powerful kings* has recently received English teachers, with a view to the introduction of knowledge among his people; and has engaged to abolish the slave-trade, which has been carried on there to a great extent. *Tananarive*, his capital, is an extensive and well built town. About 300 miles from it is *Tamatave*, a port of some trade. *Foul-point* is the port most visited by Europeans. *Port Dauphin* was a French settlement of some importance, now abandoned.

East of Madagascar are the small islands of Mauritius and Bourbon, which are valuable as places of resort and refreshment for ships in the Indian Ocean.

MAURITIUS, or the Isle of France, is possessed by the British. It consists chiefly of rugged, irregular mountains. It produces ebony, and other valuable species of wood, and tropical plants, among which is an inferior kind of cloves.

BOURBON belongs to France. It is composed of two mountains; one of which is a volcano, in continual action, and serving as a light-house to mariners. The greater portion of the island is a volcanic desert. Some parts, however, have a fertile soil, a pure air, and a delightful climate.

The COMORO ISLES, are a small group north of Madagascar, mountainous, but fertile, and well peopled. *Socotra* is subject to an Arabian chief, and is only noted for the superior quality of its aloes. The AMIRANTE and MAHE ISLES are small rocky groups of little importance.

OCEANICA,
OR THE MARITIME WORLD.

OCEANICA is formed into three principal *divisions*.—The islands lying nearest to Asia are styled the East India Islands, INDIAN ARCHIPELAGO, or MALAYSIA. New-Holland and the adjacent islands are called AUSTRALIA—and the remaining small islands of the Pacific are grouped together under the name of POLYNESIA.

There is an intimate connection between the *races* of men in all parts of the Oceanica, in the same manner as on each continent. The *prevalent race* of the Indian Archipelago and Polynesia are the Malays, and they appear mingled with the Papuan race in Australia. The *languages* of these divisions are also closely connected with the Malay. The *natives* are intelligent and lively, existing in different states of civilization, and varying in their character from great ferocity to unusual mildness. The *Javanese* are most advanced in arts and knowledge, and next to them are the inhabitants of the coast in other islands.

The *Papuans* are the prevalent race of Australia, and also inhabit the interior of the larger Asiatic Islands, and of Malacca. They are uniformly among the most degraded and savage of the human race.

The Indian Archipelago and Polynesia lie between the tropics, and their *climate* resembles that of other islands in the Torrid Zone, diminishing in heat in proportion to their distance from the continent. In the Asiatic or Indian Archipelago, the *plants* and *animals* resemble those of Southern Asia. But *in going eastward*, the bread-fruit and taro-root are found, and are used in place of rice for

food. Few animals are found in the islands of Polynesia; and Australia is almost peculiar in its vegetable and mineral productions.

MALAYSIA, OR INDIAN ARCHIPELAGO,

OR EAST INDIA ISLES.

These islands have generally a volcanic *character*, and are *liable* to frequent eruptions and earthquakes. They are usually *mountainous* and elevated in the centre. The *shores* are frequently low and swampy, and excessively unhealthy. The *interior* is generally covered with forests, and the islands abound with beasts of prey, and other animals, similar to those of Southern Asia. They *furnish* the precious metals in considerable quantities. Pepper and rice are generally the most important *products*. *Cotton* is raised in abundance for clothing—and most of the spices of commerce are obtained from these islands. A *peculiar product* is the glutinous bird's nests, large quantities of which are sold to the Chinese at an extravagant price, and are esteemed the most luxurious article of food.

It is common throughout these islands to *build houses* and towns upon posts, to avoid the floods of the rainy season; and they are sometimes erected on rafts, and floated from place to place.

These islands are *divided* into five principal groups—the Sunda or Sumatran Isles, including Sumatra, Java, and the adjacent islands—the Bornean Isles and the Celebezean Isles, (connected with Borneo and Celebez)—the Spice Islands and the Philippines.

SUMATRA.

Sumatra is the largest of the Sumatran Chain, or Sunda Isles. It is traversed by a ridge of mountains. *Mount Ophir*, the highest summit, is 13,000 feet above the level of the sea.

The *productions* are valuable; but the *people* are savage and Pagan, and generally too little improved to use them in *commerce*. The kingdom of *Acheen* on the north-west, has some trade with the coast of Coromandel. It has a capital of the same name. The English had a settlement at *Bencoolen*, which they have recently ceded to the Netherlands, together with all their claims in Sumatra, in exchange for the Dutch settlements in Hindoostan. In the *interior* of the island, there are tribes of cannibals.

Banca, a small island on the coast of Sumatra, is remarkable for extensive mines of tin.

JAVA.

Java is a valuable, fertile island, subject to the Dutch. It abounds in *forests*, and its *scenery* is beautiful. It is intersected, like Sumatra, by a ridge of *mountains*, which produce a fine salubrious *air* in the interior. They are abrupt and precipitous *on the south*, and the country is rugged. *On the north* the declivity is gradual and descending into swamps upon the coast, which render it very unhealthy.

The *soil* is generally fertile and well watered, and highly *cultivated*. The *Javanese* are well acquainted with many arts, and carry on a lucrative *trade* with the Chinese.

BATAVIA, the metropolis of the Archipelago, presents an assemblage of various nations and languages, and is the seat of very extensive commerce. The Chinese are the most numerous inhabitants. The situation is low, and the streets are traversed by filthy canals, which render the air pestilential. The population is reduced from 160,000 to 47,000. *Samarang*, *Solo*, and *Surabaya*, are all more populous cities.

CELEBEZ.

Celebez is a long, but irregular and narrow island, of which very little is known. The Dutch *control* the whole, and have a settlement at *Macassar*.

Only the Chinese are permitted to *trade* here. There are numerous *small islands* around Celebez, resembling it in character. The whole group are said to abound in poisonous *plants*.

BORNEO.

Borneo is probably the largest island in the world except New-Holland. The *interior* is little known. The greater part of the *coast*, especially on the north, consists of swamps, covered with thick forests. The *settlements* on the shore, are occupied by Malays, and Macassars from Celebez. The ourang outang is an *animal* almost peculiar to this island.

SPICE ISLANDS, OR MOLUCCAS.

Gilolo is the largest of these, which is 230 miles in length. The *natives* are industrious, and acquainted with weaving. *Ceram* produces clove-trees, and large forests of the sago-palm, whose produce forms an article of export. *Amboyna* is a beautiful island, the residence of the governor. *Banda* or *Lantoir*, is the chief island of a group, in which the nutmeg-tree is found. The *Moluccas* strictly so termed, are only five small islands, of which Ternate is the most important. The boa *serpent* is found here, 30 feet in length.

THE MANILLAS OR PHILIPPINE ISLES.

The *Philippine Islands* resemble others in the Archipelago in their climate, aspect, soil, and productions. They *belong* to Spain, and a very lucrative *commerce* was formerly carried on with them, through Acapulco and Vera Cruz, in Mexico. The government has restrained private *industry*, and has thus diminished the prosperity of these islands, and rendered them comparatively *unproductive*. Some parts are still under *native* kings. All these islands are *subject* to earthquakes, and to the destructive effects of the tuffoons, (¶ 683.)

Luzon is the largest and most important of the group, but is only cultivated on the coast. It contains *Manilla*, the capital of the Spanish possessions, which is a well-built and fortified city. The number of Christian inhabitants is computed at 12,000. *Mindanao* is next in size to Luzon. The people are addicted to piracy, and the island is much less under the control of the Spaniards. On the southern side is a volcano, which burns incessantly. *Samboang* is the principal Spanish settlement.

This group contains other small islands, too numerous for description.

AUSTRALIA.

This division of the world is the chief seat of the Papuan *race*. It *abounds* in fish, animals, and vegetables, which differ remarkably from those of other parts of the world. There are few or no *beasts of prey*, and most of the animals are of the Kangaroo kind. The islands have been so little *explored*, that the account of them is necessarily imperfect. Their physical geography has been already described page 116.

PAPUA, OR NEW-GUINEA—NEW-BRITAIN—NEW-IRELAND—SOLOMON'S ISLANDS—NEW-HEBRIDES, AND NEW-CALEDONIA.

All these islands lie within the Torrid Zone, and have its appropriate *climate* and *productions*. They are generally fertile. *Papua is remarkable* as the residence of the bird of Paradise, whose feathers are a valuable article of trade with the Chinese and Malays. *New-Caledonia* is a large but barren island. The *New-Hebrides* comprise several clusters of islands. All these islands are possessed by the Papuan *race;* and it is dangerous to Europeans to visit them

NEW HOLLAND.

New Holland is the largest island in the world, nearly equal to Europe in *size;* and is classed by some Geographers among the continents. In many points, it is in striking *contrast with our country.* It has day in our night, and summer in our winter. Its north winds are hot and its south winds cold. Among its animals, are quadrupeds that walk on two feet; others that have the bill of a bird; and few that have not some peculiarity.

The *northern parts* are almost unknown, and the *southern* but partially explored. The *eastern coast* is bordered by the Blue Mountains, and the *western* by the Darling Range, with several subordinate ranges, leaving only a narrow declivity towards the sea. The longest *rivers* yet found flow west, from the Blue Mountains, probably emptying on the southern coast. One of these, the *Darling River* is extremely salt.

The *soil* on the coast is not very fertile. In advancing towards the interior, it is better. West of the Blue Mountains, are numerous, extensive *plains*, some of which are covered with fine pasturage, and others are mere deserts in dry seasons, and marshes at other times. The *northern parts* have the *climate* of the Tropics. The *southern parts* are extremely hot and liable to severe drought in summer; but temperate and healthful at other seasons. They *produce* the grains and fruits of southern Europe.

The *natives* are in the lowest state of society, without agriculture, government, or religion. The southwestern part of New Holland is occupied by the British, under the name of *New South Wales.* It was originally *settled* by criminals sent from Great Britain; but numerous free settlers have gone, and the *moral state of society* is as good as in many parts of Europe.

Agriculture is well conducted; but *grazing* is the most profitable branch; and cattle and sheep are raised in great numbers. *Manufactures* are begun, and *commerce* is flourishing.

Sidney, the capital of New South Wales, on Port Jackson, is a flourishing place, with 10,000 inhabitants. Its harbor is excellent, and its commerce considerable. It has manufactories, ship yards, banks, and fine public buildings, and seven literary societies, a college, and a botanical garden. *Paramatta*, not far from it, has an observatory and a mission school, in which the natives have been found capable of improvement. *Newcastle*, in the north of the colony, is distinguished for its rich mines of coal. *Bathurit*, the first settlement west of the mountains, contains 2000 inhabitants. A new colony has recently been planted on the western coast, near *Sevan River;* where a church, school, and public library have already sprung up in the wilderness.

VAN DIEMEN'S LAND.

Van Diemen's Land is a large, mountainous island, abounding in lakes, streams and excellent harbors. Its *soil* is generally fertile. Its *climate* is more temperate and healthy than that of New Holland. Its *productions* are like those of the Northern United States.

The *natives* are more savage than those of New Holland. The *white population* is respectable and improving. *Agriculture* is well conducted, and the *towns* and *villages* thriving.

Hobartstown, the capital, is a well built and flourishing place.

NEW-ZEALAND enjoys a fine temperate climate, like that of France. The people are tall and well formed, and more civilized than any others in Australia. They exhibit a brave and generous temper, but they are ferocious in their enmity, and feast on human flesh. Christian missions are now established among them.

POLYNESIA.

The islands of Polynesia have a delightful *climate*, and *abound in* the bread-fruit tree, taro-root, and other nutritious vegetables. They have no *domestic animals* but the swine and the dog, and both are used for food.

The *natives* are more mild and polished in their manners than most other bar

barous nations; but dishonest and licentious in their character. Human *sacrifices* and the destruction of infants were formerly general among them.

ISLANDS NORTH OF THE EQUATOR.

The PELEW ISLANDS, and the CAROLINES are remakable for their fine climate, and are often resorted to by ships, as places of refreshment. The *Pelew Islanders* are very hospitable to strangers, and are superior to most other natives of Polynesia in honesty and chastity.

The LADRONES, or Isles of Robbers, received their name from the character of the people; who have been accustomed to practice piracy, especially upon the Chinese vessels.

The SANDWICH ISLANDS are the most important group north of the equator. They are ten in *number*, lying about 3000 miles west of Mexico. *Hawaii*, or Owhyhee is the largest, containing about 4000 square miles, and 90,000 inhabitants. Its mountains rise to the height of 18,000 feet, and one of them is among the most remarkable volcanoes in the world. *Oahu* or Woahoo is the most beautiful and fertile of the islands. These Islands are the *resort* of ships engaged in the whale and seal fisheries, in the Pacific Ocean; and they *furnish* large quantities of sandal wood for the Chinese trade. The *population* is estimated at 185,000.

The natives practice *agriculture*, and exhibit much ingenuity in some *manufactures*. They have *improved* in the arts by intercourse with Europeans. The king has formed a small *navy*, and carries on a profitable *trade* with foreigners. His *palace*, modes of living, and dress, are in the European style. The people of these islands have thrown away their *idols*, and Christian missionaries from the United States are now employed in communicating religious and other useful knowledge. One-fourth of the whole population now attend the *schools* established by them. The king and his court, and the mass of the people, have embraced *Christianity*, and the general state of *morals* is greatly improved.

ISLANDS SOUTH OF THE EQUATOR.

THE FRIENDLY ISLANDS include the Fejee, and several other detached islands. The *natives* are remarkable for their neatness and skill in cultivating and enclosing their lands.

Tongataboo is the largest of the Friendly Islands. It is often stained with the blood of human victims, although these islands are remarkably free from wars.

THE NAVIGATOR'S ISLES are the most important and fertile group yet discovered in Southern Polynesia. The *natives* are uncommonly tall and stout, and remarkable for a ferocity of character scarcely found in any other part of Polynesia. Still they are industrious and ingenious, and exhibit much skill in some of their *manufactures*.

The MARQUESAS are said to be distinguished for the fair complexion and peculiar beauty of the people.

The SOCIETY ISLES, of which *Tahiti* (Otaheite) is the largest, have attracted more attention than any others in Polynesia. They are fertile and beautiful, but none of them are so large as Hawaii.

These islands present the first example of a people converted to Christianity in modern times—an event accomplished by the labors of Christian missionaries, through a long series of discouragements and dangers. The people are now as much distinguished by their regard for religion and morality, as they once were for idolatry and licentiousness; and are advancing in knowledge and arts.

GEOLOGY.

The following article was inserted during the Author's absence, to be studied in connection with the Structure of the Earth, page 20, of the Modern Geography.—It is retained for the convenience of those instructors who adopt the peculiar system of Geology, on which it is founded.

GEOLOGY is that science which shows the structure of the earth, and the materials which compose its surface, as far as man has penetrated into the interior.

It is found that *rocks lie over each other* in a certain order.

Geologists make five classes of rocks, viz:—

Primitive, Transition, Secondary, Superincumbent, and Alluvial.

It is supposed by Geologists, that the materials of the earth must have been at some former period, in a fluid state; that minerals were deposited from this state, the heaviest taking the lowest place; and that the waters of the ocean once covered the tops of the highest mountains.

Every rock consists of one or more of the following homogeneous minerals; all other minerals, found in rocks, are considered as *accidental*, and the study of them is called *Mineralogy*.

The simple minerals, which form what is called the Alphabet of Geology, are Quartz, Feldspar, Mica, Talc, Hornblende, Argillite or Slate, Limestone, Gypsum, and Chlorite.

FIRST CLASS. *Primitive Rocks* include those compound rocks, which never contain any petrifactions, nor any coal or salt. The strata are nearly perpendicular: they are the lowest rocks which have been discovered, and it is supposed they were formed before the creation of vegetables or animals.

The rocks belonging to this class are,

Granite, Gneiss, Mica Slate, Hornblende Rock, Talcose Rock, Granular Quartz.

Granite is composed of quartz, feldspar, and mica; it is found in vast quantities in many countries; it constitutes a large portion of many of the highest mountains; it forms a siliceous soil, not favorable to vegetation, and makes a beautiful and durable building stone.

Gneiss. This rock is composed of the same materials as granite, viz. quartz, feldspar, and mica; but the mica is arranged in parallel layers.

Mica Slate is composed chiefly of quartz and mica; the mica usually predominates. It disintegrates more rapidly than granite or gneiss.

Hornblende Rock consists of Hornblende and feldspar; when the feldspar is in disseminated masses, it is called *Sienite.* The predominant color of the rock is green, sometimes inclining to brown. The Sienite variety is susceptible of a high polish, and forms beautiful pieces for ornament.

Talcose Rock is an aggregate of talc and fine grains of quartz, and generally some mica. It is a slaty rock, and of a silver-gray color.

Granular Quartz, is made up of grains of quartz, without any appearance of cement; when white, its sand is used in making glass.

Granular Lime Rock is made up of grains having a crystalline appearance; it receives a high polish, and is much used for monuments, pillars, and in building.

Sparry Lime Rock is made up of fine grains of carbonate of lim it resembles Nova Scotia plaster. From this stratum, nitrogen gas, in vast quantities, is supposed to issue.

Primitive Argillite is a homogeneous rock, of a slaty structure. It is used for roofing buildings.

SECOND CLASS. *Transition Rocks* include those rocks lying over the primitive, which sometimes contain shells, but never any petrifactions of land animals or vegetables.

The rocks belonging to this class are,

Transition Argillite, Calciferous Sand Rock, Metalliferous Lime Rock, Graywacke, and Old Red Sand Stone.

Transition Argillite is a soft homogeneous rock, mostly of a bluish or dark color. It composes the rocks of the Cohoes Falls. There seems to be very little difference between this and the Primitive Argillite, and it is thought proper by some geologists to include them all in one class.

Calciferous Sand Rock is composed of grains of quartz and carbonate of lime.

Metalliferous Lime Rock is of a gray or slate color. It derives its name from being often found to contain silver and other metals.

Graywacke is an aggregate of sand cemented by clay; it often contains scales of talc and mica. The color is usually gray. This rock constitutes most of the Catskill and Alleghany mountains.

Old Red Sand Stone is an aggregate of angular grains of quartzose sand, held together by a *ferrugineous argillaceous cement. It forms a loose, red soil: it is valuable for building; when wrought, it is called *Free Stone*. It forms the bank of Connecticut River.

THIRD CLASS. *Secondary Rocks*. These lie above the transition, and appear like deposites, composed of grains which once belonged to primitive rocks. They contain petrifactions of animals and plants.

The rocks of this class are,

Millstone Grit, Saliferous Rock, Gray Band, Ferriferous Slate, Ferriferous Sand Rock, Calciferous Slate, Geodiferous Lime Rock, Cornitiferous Lime Rock, and Pyritiferous Rock.

Millstone Grit is a coarse, harsh aggregate of sand and pebbles; the color is gray or reddish. It is used for millstones.

Saliferous Rock constitutes the floor of all the salt springs in the western country. It is used in Rochester as a building stone.

Gray Band is a hard, fine-grained gray rock, so compact that it may be considered homogeneous.

Ferriferous Slate is a hard siliceous rock, lying over iron ore. It often appears in the bed of the Western Canal.

Calciferous Slate. This rock often contains carbonate of lime; it embraces beds of plaster and shell limestone; it forms by disintegration the best of soils.

Geodiferous Lime Rock. The name is given on account of small cavities which it contains, called *geodes*. This rock is found at Lockport, and Niagara Falls.

Cornitiferous Lime Rock is made up of layers of shell limestone, containing beds of horn stone: from this circumstance it receives its name—the Latin word *cornu*, signifying a horn. This rock is remarkable for its numerous caverns.

Pyritiferous Rock is a calcareous gray rock abounding in iron pyrites.

FOURTH CLASS. *Superincumbent Rocks* include those hornblende rocks which lie over other rocks, in a non-conformable position; they are considered by many geologists as of volcanic origin. These rocks are,

Amygdaloid, or Basalt, and Greenstone Trap.

Amygdaloid is an aggregate of hornblende particles; color is dark gray, or brown.

Greenstone Trap is an aggregate of hornblende and feldspar. This rock forms the Palisadoes, on the Hudson river.

FIFTH CLASS. *Alluvial* includes deposites which are made of broken strata, consisting of clay, sand and pebbles. This class is divided into three sections, viz:

Antediluvial, before the flood; *Diluvial*, at the flood; and *Postdiluvial*, after the flood.

Plastic Clay, of a white, or gray color; it contains some siliceous, but no calcareous matter; it contains gypsum and fullers' earth.

Marly Clay consists of a stiff blue, or blackish clay, and calcareous matter: it is found on the banks of the Hudson, at Albany.

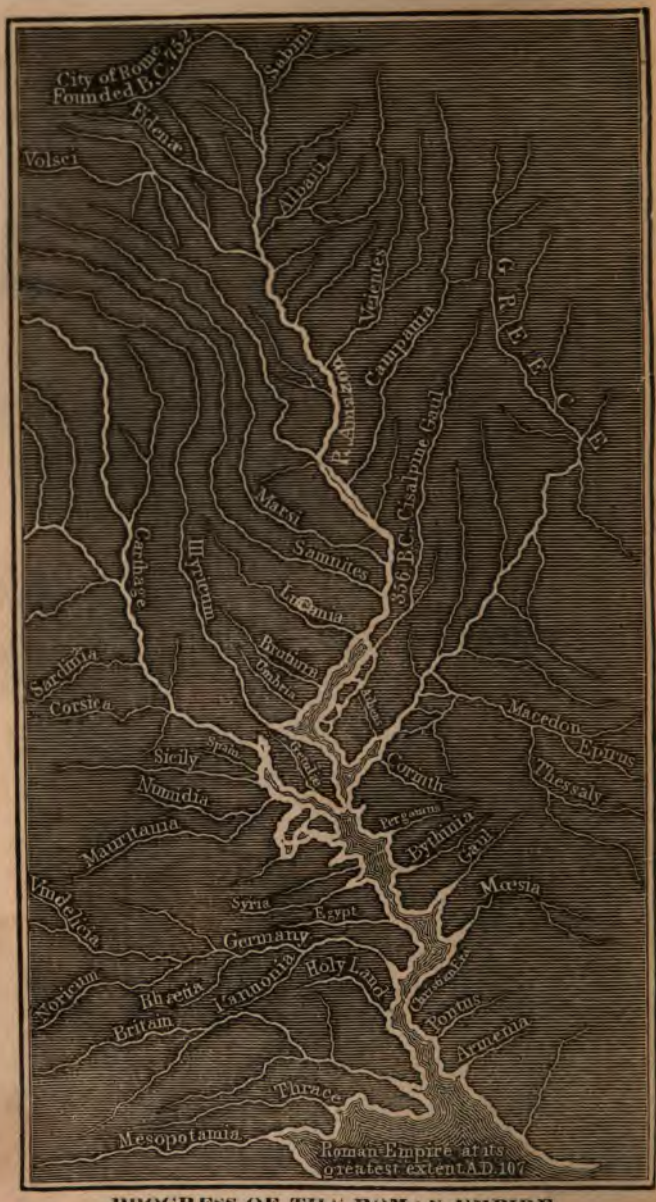
Bagshot Sand consists of loose porous sand, of a brown color. The barren soil on the banks of the Hudson River is mostly composed of this sand.

It is recommended to teachers of this book, to procure a small cabinet of minerals. The whole number of specimens which form a complete system of Geology is only about thirty, and so common, as to be easily obtained.

---

* Partaking of the properties of iron

ANCIENT GEOGRAPHY.



PROGRESS OF THE ROMAN EMPIRE,

ILLUSTRATED BY THE COURSE OF THE RIVER AMAZON.

ANCIENT GEOGRAPHY,

AS CONNECTED WITH

CHRONOLOGY,

AND PREPARATORY TO THE STUDY OF

ANCIENT HISTORY:

ACCOMPANIED

WITH AN ATLAS.

BY EMMA WILLARD,

AUTHOR OF "A PLAN FOR IMPROVING FEMALE EDUCATION, ADDRESSED TO THE LEGISLATURE OF NEW-YORK," AND PRINCIPAL OF THE FEMALE SEMINARY AT TROY.

COMPILED CHIEFLY FROM D'ANVILLE, ADAM, LAVOISNE, MALTE-BRUN, AND OTHER STANDARD WORKS.

TO WHICH ARE ADDED

PROBLEMS ON THE GLOBES,

AND RULES FOR THE CONSTRUCTION OF MAPS.

TO ACCOMPANY THE MODERN GEOGRAPHY BY

WILLIAM C. WOODBRIDGE.

SEVENTH EDITION.

HARTFORD:

PUBLISHED BY JOHN BEACH.

1836.

DISTRICT OF CONNECTICUT, *ss.*

BE IT REMEMBERED, That on the first day of October, in the forty-seventh year of the Independence of the United States of America, William C. Woodbridge, of the said District, and Emma Willard, of the District of New York, have deposited in this office the title of a Book, the right whereof they claim as Authors and Proprietors, in the words following—to wit: "Ancient Geography, as connected with Chronology, and preparatory to the study of Ancient History: By Emma Willard." In conformity to the Act of the Congress of the United States, entitled "An act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the Authors and Proprietors of such copies during the times therein mentioned." And also to an act, entitled, "An act supplementary to an act, entitled, an act for the encouragement of learning, by securing the copies of Maps, Charts, and Books, to the Authors and Proprietors of such copies during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

CHAS. A. INGERSOLL,
Clerk of the District of Connecticut

A true copy of Record, examined and sealed by me,

CHAS. A. INGERSOLL,
Clerk of the District of Connecticut

PUBLISHER'S NOTICE.

In connection with this Edition of the Ancient Geography, is published AN ANCIENT ATLAS, prepared by Mrs. Willard, expressly to accompany this work. In many respects this Atlas is unlike any similar work that has been published; and these variations, the Publisher believes will be found to embrace important advantages.

The Atlas is sold in a separate quarto form, including several pages of questions.

INTRODUCTION.

Although facts constitute a very important part of human knowledge, yet some persons find their recollection of past occurrences too indistinct and uncertain, to afford much light for the regulation of their conduct. Others, on the contrary, can rely on the correctness of their knowledge, and command the confidence of those whom they may wish to persuade. The superiority of the latter appears to me to result, in a great measure, from their having acquired a habit, not possessed by the former, of associating with events the time and the place in which they happened. If in teaching history, we can fix this habit in the mind of the pupil, while we give him a knowledge of its facts, we shall have accomplished two important objects at the same time.

To locate the events of history, requires a knowledge of ancient geography. This the pupil may obtain, either by examining maps as he proceeds with his history, or by studying them before he commences. But to require him to find on his map all the cities, mountains, &c. of which he reads, when he does not know in what country, or in what quarter of the globe they are situated, is to waste his time, and to discourage him in the outset from forming the habit which we wish. This he easily acquires, when ancient geography is the introductory study. Not that we expect the mind of the scholar in either ancient or modern geography will contain at once the name of every place. He does not so much learn to do without his maps, as to use them with ease and pleasure.

The habit of locating facts once acquired, improvement in geography and in the history of past or passing events, will go on and mutually aid each other. The event will be remembered from the place, and the place from the event. By a knowledge of geography the reasoning powers are enabled to assist the memory, both in receiving and retaining historical events. The pupil will be able of himself to fill up a sketch, whether imperfect from a defect in original information or subsequent forgetfulness. Suppose, for instance, he learns that Alexander the Great went on an overland expedition; in the course of which, he fought a battle at Granicus, another at Issus, and afterwards visited the temple of Jupiter Ammon, in

Lybia; by a moment's recurrence to the picture of the map in his mind, he will know that Alexander must have passed through the interior of Asia Minor, and along the coast of the Mediterranean, through Syria and Egypt. He will perhaps conjecture of himself that he founded those cities on his route which are called by his name, and easily remember, that he took, in his way, Tyre and Gaza.

The systems of Ancient Geography which I examined, were not adapted to my peculiar views. I therefore arranged one for the use of my pupils, the same which forms the basis of that which is here offered to the public. The works which I examined, contained catalogues of names, that the pupil is expected to learn from the book; or which he will learn in this way if permitted, rather than to be at the trouble of searching them out upon the maps. The consequence of this will be, that he will associate them with that page of his book from which he learned them, rather than those places on the map to which they belong. Were learners never to see the names of places till they see them on their maps, the association of the name with the place would be more perfect. With this view, I wished the pupils of my school to have nothing more to aid them in studying their maps, than a set of questions, which would lead them to form this association, and which would also assist their teacher, by enabling the class definitely to understand what they were required to learn; these questions should, however, be accompanied by explanations of those parts of the maps, which would otherwise be obscure.

With respect to the succession of events, without particular care to prevent it, the study of ancient geography will tend to confuse instead of enlightening the learner. Descriptions of places, as they were in different ages of the world, are almost unavoidably set in books, without any other distinction of time, than the general terms ancient and modern; while all ancient empires and cities, whether coexistent or not, are placed together on the maps. But the terms ancient and modern, as applied to geography, can no more be contrasted than a point and a line; the one referring to the present merely, the other, to that long course of ages, during which those numerous important changes in society took place, which it is the business of history to describe. Maps, of historical or progressive geography, are pictures of things in a changing state; and such, to be accurate, can take in but a single point of time.* Considering these circumstances, it became a problem with me, to

* For a further illustration of these principles, see article on Difficulties occurring in the study of Ancient Maps, &c.

find some method of introducing my pupils to the study of history, by which they might habitually acquire clear ideas of the dates of events, while they were learning their places; and to solve this has been a leading object of that part of the work which they are required to study after the questions on the maps.

Although of the three ideas, an event, its place, and date, the event is the most important, yet it is the visible representation of the place, with which, for the purpose of permanent impression, we should seek to associate the event and its date. Hence the importance of requiring the student to examine his maps frequently, while he is studying historical facts. In chronological charts, events are connected with the time in which they happened by means of visible objects, as colours, &c., but the associations are arbitrary; whereas, in the method here proposed, the visible object with which the fact is connected, is the true geographical representation of the place in which it happened.

To mention in an elementary work, many names of objects without explanation, appears to me calculated to injure the mind of the young pupil, by repressing his natural curiosity to understand the things which are brought under his consideration, and giving him a habit of being satisfied with mere words. On this principle, I have sometimes preferred, as my limits are not extensive, to mention fewer objects, and to give a more full idea of these.

In the description of places, I have omitted the enumeration of such as are celebrated for some particular event, partly from the same principle, and partly from my design to present facts as much as possible in the order of time. These enumerations generally present mere glances at detached passages of history and fable, which are too apt in this way to be mingled together in the mind of the learner.

The pupil who follows the method here adopted, will, however, be obliged to learn a much greater number than ordinary, of celebrated places connected with the circumstances for which they are noted. But they are arranged in a different order. Those celebrated by their connexion with the events of profane history are found with the chronology; and those with sacred and fabulous in distinct articles.

This work not being designed for a book of reference, but solely for learners, we have not made a point of giving complete lists of modern names corresponding to ancient.* The true

* In this edition it has been thought advisable to insert the names of the more important modern places corresponding with the ancient. In teaching this

method of teaching these is to oblige the pupil to compare the ancient with the modern maps. Many questions should be given with a view to this object. Besides, if the modern place corresponding to the ancient is important, the pupil will have learned it already from the modern map. If it is not, why burden his memory to learn it at all? It is of consequence to him to understand where were Platea and Pharsalus, because he cannot otherwise comprehend the movements of the armies which engaged upon their plains; but it does not much concern him to know, by what names the obscure villages may be called, which now occupy these venerable sites.

Persons who have in their youth read history without method, will feel with the author, that they have lost much by not being taught some such plan, as is laid down in the directions for making maps. In reviewing the long line of time which has elapsed since the date of history, it would be absurd to expect that in each point which composes it, we should have clear ideas of every remarkable contemporaneous event. At the same time, every person possessed of historical knowledge, must be sensible that there are in his mind certain points of time, from which, like eminences in a road, he can look abroad and discover the remarkable objects there existing together; and that, were it otherwise, his knowledge would run into one confused mass. In this plan, we erect these eminences for the pupil, that thus they may be made at proper intervals, and that by contemplating them in early youth, the impressions may be permanent. We plant him, as it were, upon one of these spots of time; we detain him upon it till he has collected every important fact, and we oblige him to delineate it in a manner sensible to the eye, and giving him ever after a command of the whole at a single glance.

---

work, an inconvenience has been experienced in regard to pupils who are not sufficiently acquainted with modern geography, and instructers will sometimes be obliged to admit such into their classes. The principles laid down in the introduction are, however, still believed to be correct. Another reason for giving modern names corresponding with the ancient, is, that having adopted the method of teaching geography by exercising the pupils in drawing maps, the modern names assist the teacher without injuring the progress of the learner. Our pupils draw on their slates or black boards the outlines of their map, such as coasts, rivers, &c., making the usual characters for cities and towns, but omitting the names; which in explaining their work they give to their teacher from recollection. This process is repeated till the map is drawn wholly from the idea in the mind. It will readily be seen that this method does not permit the pupil to get his lesson without actually understanding his maps; while the list of names in the book will prove to the teacher a convenient reminiscence. For those, however, who prefer the method of teaching contemplated by the first edition of this work, a set of questions will accompany the Atlas.

THE ANCIENT WORLD ACCORDING TO STRABO.

ANCIENT GEOGRAPHY.

THE only portions of the earth known to the ancients, were those lying around the Mediterranean Sea; comprehending the southern and largest part of Europe, the northern of Africa, and the south-western of Asia.

By the ancients are here meant all those from whom we derive our knowledge of the ancient state of the world, as the Greeks, Romans, and Jews.

The principal geographers among the Greeks were Herodotus, Diodorus Siculus, Strabo, and Ptolemy; and among the Romans, Pliny. Of Jewish writers, the sacred historians and Josephus afford us the most geographical information.

The limited notions of the ancients with respect to the extent of the earth, may be seen from the engraved sketch of the map of Strabo. They supposed that the continent on which they resided, constituted the world; and that it was enclosed on every side by an ocean, which approached so near the Mediterranean, as to cut off about half of what is now known to be the extent of the eastern continent. It was a dispute in Greece, whether mount Olympus or the temple of Apollo at Delphos, was the exact centre of the world. It was the world

here described that Alexander was ambitious to conquer, and of which the Romans were resolved to make their city the sovereign.

The maps of D'Anville and other modern authors, which are studied to obtain a knowledge of ancient geography, are often called ancient maps; but they are in reality modern maps, to which with great study and care, the ancient names of seas, countries, &c. have been annexed. Because the great features of nature are permanent, the moderns conclude that whatever notions the ancients might have entertained concerning the several divisions of land and water, they were in reality of the same form and extent in ancient as in modern times. What these notions were, at as late a period as the commencement of the Christian era, may be known from the map of Strabo. By examining this map it will at once be perceived how difficult it is in many cases to decide, what are the real portions of the earth to which the ancient names belong; and the impossibility in other cases of determining the boundaries, where the name is not doubted. These points have caused disputes among the learned, many of which are now unsettled. Among these there is one respecting the situation of a portion of land, supposed to be an island, which Pytheas of Marseilles, an ancient navigator, discovered to the north of Britain, and called Thule. As it is now known that there are a number of islands, as well as portions of the continent, to which the description given by Pytheas may be applied, it becomes questionable which is meant. Some of the learned maintain that it was Iceland, others, the peninsula of Jutland, others, that of Scandinavia; but the most prevalent opinion, at this time, is, that it was the Shetland Islands.

The only countries of which the ancient geographers had tolerably correct notions, were those around the eastern section of the Mediterranean; and as they went from these, their ideas generally became more and more confused and erroneous. It was gravely debated whether Italy was a square or triangle. Spain was said to form a rectangle, of which the Pyrenees running north and south, were the eastern boundary. Julius Cæsar supposed the form of Britain to be triangular. The southern part of India was not known to be a peninsula. The Caspian Sea was thought to be a Bay of the great Northern Ocean, and the Ganges to fall into the Atlantic, which, till after the discovery of America, was believed to wash the eastern shores of Asia.

Although the spherical figure of the earth was known to some of the wisest of the ancient philosophers, yet in general

their ideas on this point were very imperfect, until after they became corrected by an acquaintance with astronomy. Some thought the earth's figure concave, others a plain; some, that it was quadrangular, others, oblong. It was the general opinion that all countries south of the equator were rendered uninhabitable by intense heat.*

The ancients had even more extravagant notions concerning the inhabitants of distant countries, than of the countries themselves. Having by some means obtained an idea that some singular race of beings inhabited a particular region, when, from improvements in geography, it was ascertained that no such beings were in that region; authors unwilling to relinquish the idea of their existence, supposed that the place of their residence had been mistaken, and assigned them another location. For example, the ancients believed that there existed a race of female warriors, called Amazons. At first, they were supposed to reside near Colchis; next, the ancient writers placed them in the vicinity of the river Thermodon. Strabo supposed that they dwelt in the valleys of Caucasus; Ptolemy, on the banks of the Volga. The writers of the middle ages placed them in the obscure regions of Scandinavia; and finally after the discovery of the western continent, they were located in the heart of South America; and their name has been preserved in that of the most majestic river of the world.

The pupil here introduced to the study of ancient geography, is supposed already to understand that of modern. But in many particulars the student learns them both at the same time, because the two studies partially coincide. To enable him to ascertain in what respect the geography of ancient times is the same as that of modern, a simple and comprehensive rule may be given.

In geographical description, whatever is the work of nature may be considered *permanent*, whatever is the work of art, *changing*.

The divisions of land and water, such as continents, seas, islands, mountains, rivers, &c. are formed by the Creator; and we find them, at the earliest date of geographical information, with a few comparatively unimportant exceptions, the same as at present.

That the great features of nature have undergone important changes, in some remote age, is evident from the fact, that mountains are found, which contain such vast quantities of pe-

* The dotted lines on the map of Strabo, mark the limits of what the ancients supposed to be the habitable part of the world.

rified marine productions, as to justify the belief that they must have once constituted a part of the bed of the ocean. But at what time or in what manner these changes were produced, we are left to conjecture, since, with a few exceptions, they took place previous to the date of historical or geographical records. The most important of those known in history are detailed in a subsequent page.

The names which different portions of land and water receive, the division of the earth into countries, the collection of families and tribes under one common government, their cities, temples, palaces, &c. being the work of man, are subject to great and frequent changes. Accordingly, we find that the different parts of the earth and sea have in most instances changed their names. Empires have passed away. Of the most famous cities of antiquity, some, like Troy and Memphis, are so entirely demolished, that no vestige remains to mark the place where they stood. Some, like Babylon, offer a few melancholy remains, barely sufficient to identify their situation; while others, like Athens and Palmyra, present, in their mouldering palaces and temples, the most striking picture of the instability of the works of man.

ABBREVIATIONS, &c.

The following words and abbreviations are used on ancient maps, to denote the natural divisions of the earth, &c.*

Pr. or prom. (Promontorium)	a Cape.
Sin. or Sinus	a Bay.
Ins. or Insula	an Island.
Mare or Pontus	a Sea.
Mons	a Mountain.
Fr. or Fretum	a Strait.
Lac. or Lacus	a Lake.
Fl. or Flumen	a River.
Cher. or Chersonesus	a Peninsula.
Val. or Vallum	a Wall.
Via	a Way or Road.
Pyla	a Gate or Strait.

* It seems more proper in works designed for pupils who are not studying the dead languages, that the English, rather than the Latin phraseology should be used: but in so many ancient maps the latter prevails, that we have thought it best that enough of our maps should have the Latin terminations, to accustom pupils to the use of them. For the same reason, both the Latin and English are given in the first part of the sketch of countries in the book.

COUNTRIES KNOWN TO THE ANCIENTS:

*Arranged according to the Historical Epochas in which they became known.**

[The first map of the Atlas connected with this work, exhibits one main feature of its plan, which is in progressive geography to connect by association time with place.]

Countries known at the close of the First Epocha, B. C. 1921.†

Chaldea,	Which in the earliest periods, included the country between the Euphrates and Tigris, and is supposed to have contained the garden of Eden. This name was afterwards restricted to the country south-west of the Euphrates.
Assyria, Babylonia, Syria, Mesopotamia, Armenia, Colchis, Asia Minor.‡	Now Turkey in Asia.
Persia, Susiana, Media, Aria, Bactriana,	Now included within the bounds of Persia; —Bactriana was, however, partly within the present limits of Independent Tartary.
Arabia, Egypt,	Retain their ancient names.
Ethiopia,	Now Nubia and Abyssinia.
Sicyon,	A city of Greece, the earliest founded of any in that country. Greece was not generally known till a later period.

* See Map No. 1.

† For a more particular account of the chronological division of ancient time into Epochas, see article on Chronology.

‡ The term "Asia Minor" was not in use among the ancients; but the country was called Asia.

Countries which became known during the Second Epocha ending B. C. 1491

Greece or Græcia, Thrace or Thracia, Illyricum.	Now Turkey in Europe.
Part of Sarmatia.	Southern part of Russia.
Cannan.	Part of Turkey in Asia.

Third Epocha, ending B. C. 980.

Italy or Italia.	Italy.

Canaan changed its name during this epocha to Palestine.

Fourth Epocha, ending B. C. 752.

Carmania, Gedrosia	East Persia.
India,	Hindoostan.
Libya.	Libya.
Carthage or Carthago	Was founded during this Epocha, but the country in which it is situated was not known till a later period.

Fifth Epocha, ending B. C. 356.

Scythia, Sogdiana, Country of the Sacæ.	Siberia and northern part of the Chinese Empire.
Mæsia.	Servia and Bulgaria in Turkey in Europe.
Dacia.	Wallachia, Transylvania, Moldavia and a part of Hungary.
Gaul or Gallia, including Helvetia.	France and Switzerland
Sarmatia.	Northern part of Russia.

Sixth Epocha, ending at the Christian Era

Spain or Hispania.	Spain

Britain or Brittannia, and Caledonia.	England and Scotland
Hibernia.	Ireland.
Cimbria.	Denmark.
Germany or Germania,	Germany between the Rhine and Vistula.
Rhætia,	The country of the Grisons.
Noricum,	Austria, Steria, Carinthia, Suabia, and Bavaria.
Vindelicia,	
Pannonia.	
Scandinavia or Scandia.	Norway and Sweden.
Mauritania.	Morocco and Algiers.
Gætulia.	Southern part of the Barbary States.

Concerning the remote eastern and northern countries of Asia, it is extremely difficult to find any correct data, on which to form any opinion as to the time in which they became known. It is certain that what few ideas the ancient geographers had of them were confused and incorrect.

It may be presumed that the seas became known about the same time with the countries to which they are contiguous Of these, many retain their ancient names.

The Atlantic Sea, or Mare Atlanticum.	Now Atlantic Ocean.
The Mediterranean Sea, or Mare Mediterraneum or Interior Sea, or Mare Internum.	Is now called the Mediterranean Sea. The eastern part in very ancient times was called the Great Sea.
Red Sea, or Sinus Arabicus.	Red Sea, or Arabian Gulf.
Caspian Sea.	Caspian Sea.
Persian Gulf.	Persian Gulf.
Euxine Sea, or Pontus Euxinus.	Black Sea.
Ægæan Sea, or Mare Ægæum.	Archipelago.
Adriatic Gulf, or Sinus Adriaticus.	Gulf of Venice
Sea of Aquitania, or Oceanus Aquitanicus.	Bay of Biscay.
German Ocean, or Oceanus Germanicus	German Ocean, or North Sea.
Gulf of Codanus, or Sinus Codanus.	Baltic Sea

EUROPE.

Europe, although inferior in extent to Asia and Africa, has ever been superior to them in the learning, power, and genius of its inhabitants.

Of the empires mentioned in ancient history, those whose seats were in Asia and Africa, seldom extended into Europe, while those whose seats were in Europe, were frequently carried by conquests over large countries belonging to Asia and Africa.

GREECE.*

To the student in elegant literature, Ancient Greece is the most interesting of all countries. The human mind appears to have taken its loftiest flights from this region. In respect to language, that most wonderful of all human inventions, the learned agree that the ancient Greeks excelled all other nations. They originated many of the sciences, and were pre-eminent in the elegant arts of oratory, poetry, painting, sculpture, and architecture.

With the science and elegant literature which we derive from the Greeks, we find associated many of the ancient names of their cities, rivers, &c., which thus become more interesting to us than the modern.

Greece included that country which lay between the Adriatic and Ionian seas on the west, and the Ægean Sea on the south-east. Illyricum was considered a country separate from Greece, till annexed to it by Philip of Macedon.

The five large divisions of Greece were Peloponnesus, Græcia Propria, Thessaly, Macedonia, and Epirus.

	Subdivisions.	
PELOPONNESUS.	ARGOLIS.	Whose chief cities were *Argos* (Argo).† *Epidaurus*, *Nauplia*, (Napoli).
	LACONIA.	*Sparta* (Misitra, see description of cities) *Epidaurus* (Malvasio Vecchio).
	MESSENIA.	*Messene*, *Pylos* (Navarin).
	ELIS.	*Olympia*, *Elis*, *Cyllene*.
	ACHAIA.	*Sicyon*, the oldest city in Greece, *Corinth*, situated on the middle of the isthmus of Corinth, between the Corinthian and Saronic Gulfs, having the port of Lechæum on the former and Cenchreæ on the latter.
	ARCADIA.	*Mantinea*, (Tripolizza), *Tegæa Megalopolis*, (Leondri); *Orchomene*.

* See Map No. 4.

† The modern names, when inserted, are enclosed in parentheses

GRÆCIA PROPRIA.	ATTICA.	*Athens* (Athens or Setines, see description of cities), *Panormus*, *Marathon*, (Eleusis).
	MEGARIS.	*Megara.**
	BŒOTIA.	*Thebes* (Thiva or Thebes, see description of cities), *Aulis*, *Leuctra*, *Platea*, *Lebadea*, (Livadia).
	PHOCIS.	*Delphi*, *Elatea*.
	LOCRIS.	*Naupactus* (Lepanto), *Thermopylæ*, considered as the key of Greece; its celebrated pass is only sixty paces broad. It affords room but for a single carriage between Mount Œta and the Malian Gulf.
	DORIS.	
	ETOLIA.	*Calydon*, *Thermus*.
THESSALIA.	PELASGIOTIS; so called from the Pelasgi, who inhabited it.	*Larissa*, *Gomnes*, *Heraclea*.
	THESSALIOTIS.	*Pharsalia*.
	PHTHIOTIS.	
	MAGNESIA.	*Melibœa*.
MACEDONIA.	PÆONIA.	
	PIERIA.	
	EMATHIA.	*Berea*, *Edessa*, *Pella*.
	MYGDONIA.	*Thessalonica* (Saloniki).
	AMPHAXITES.	
	CHALCIDICE.	*Apollonia* (Polina), *Olynthus*, *Stagira*.
	EDONICA.	*Amphipolis*, (Jemboli), *Neapolis*, *Philippi*.
	SINTICA.	
EPIRUS.	ACARNANIA.	*Actium*, *Argos*.
	THRESPROTIA.	*Buthrotum* (Butrinto).
	CHAONIA.	
	MOLOSSIS.	

GULFS.—*Strymon* (Contessa), *Thermæan* (Salonica), *Pelasgian* (Volo), *Malian* (Zeiton), *Saronic* (Egina), *Argolis* (Nepoli), *Laconic* (Colokythia), *Messenian* (Coron), *Cyparissus* (Arcadia), *Corinthian* (Lepanto), *Ambracia* (Arta.)

The gulfs of Peloponnesus indented it in such a manner that it resembles a leaf, and from that of a mulberry it has acquired the name of Morea.

* Euclid was a native of Megara. There being a war between Megara and Athens, Euclid went thither in one night, a distance of twenty-one miles, in the dress of a woman, to visit Socrates, his former instructer.

PROMONTORIES.—*Ampelos*, *Sunium*, near which was a mine of silver, from which the Athenians derived an immense revenue. *Scyllæum*, *Malea* (St. Angelo), *Tenarum*, (Matapan), *Araxum*.

ISLANDS.—In the Ægean Sea, west of Thessaly, were several small islands, among which were *Halonessus* (Dromo), *Prepanthus*, *Scopetas*, (Scopetus,) and *Sciathus* (Sciathe).

The large island of *Euboea* (Negropont), was separated from the continent by the straits of Euripus, which were so narrow as to admit a bridge to be built over them. The ebb and flow of the tide was here said to be seven times in a day and night. In the Saronic Gulf were *Salamis* (Colouri,) and *Egina* (Engia.) These were surrounded by smaller islands, which rendered the navigation dangerous.

East of the Peloponnesus were the CYCLADES, so called from being in the form of a circle round *Delos*. The chief of these Islands were, *Naxos* (Naxia), which was fertile in wines. *Paros*, distinguished for its beautiful white marbles: *Andros* (Andro), *Tenos* (Teno,) *Myconeis*, (Myconi), *Ceos*, *Cythnos* (Cephanto), and *Melos*.

The Island of *Cythera* (Cerigo,) was south of Laconia.

In the Ionian Sea were *Zacynthus* (Zante), *Cephalenia* (Cefalonia), *Ithaca* (Theaki), *Corcyta* (Corfu), and *Leucadia* (Lefkathia, or St. Maura). This island was formerly a peninsula. On the southwest point of it, a white rock projects into the sea, which gave name to the island.*

Creta or *Crete* (Candia), was the largest island belonging to Greece. It was mountainous and woody, with fertile valleys interspersed. It produced chalk, and was thence called Creta. It was once famous for its hundred cities, of which the principal were *Gnossus* (Candia), *Gortina* and *Cydonia*.

MOUNTAINS.—The distinguishing feature of Arcadia was its mountains. The principal were Mount *Menalus*, *Erymanthus*, *Stymphalus*, and *Cyllene*. In Laconia was *Taygetus* (Mountains of the Mainotes). In Græcia Propria, was *Pentellicus*, celebrated for its marble quarries. *Hymettus* for producing honey, and also the mountains of *Cithæron*, *Hellicon* and *Parnassus*.

Thessaly was surrounded by mountains. In the east were *Pelion* and *Ossa;* on the north, *Olympus;* on the west, *Pindus*, and on the south, *Othrys* and *Œla*. Mount *Ithos* was in Macedonia.

---

*It was fabled that a leap into the sea from this rock, was a cure for the passion of love; hence it was called the *Lover's Leap*.

The *Acro Ceraunii* mountains in Epirus, are so called from their tops being struck with thunder. They were surrounded by rocks which projected into the sea, and were dangerous to mariners; from this place was the shortest passage to Italy.

Rivers.—In Peloponnesus were the *Inachus*, *Eurotas*, *Alpheus*, and *Peneus* (Belvidere). The *Crathis* received the waters of the *Styx*.*

In Græcia Propria the *Evenus* (Fidari), was in Etolia; the Cephissus which emptied into *Lake Copais*, the *Asopus* and *Thermoddon* in Bœotia; in Attica, Athens was situated at the junction of the *Ilissus* and *Cephissus*.

In Epirus were the *Acheron* and *Cocytus* near *Lake Averscenus*.†

In Thessaly, the *Apidanus* and *Enipeus* emptied into the *Peneus*. From Larissa to the Ægean sea, the Peneus, enclosed between Mount Ossa and Olympus, was narrow and rapid. Along this passage was the beautiful *Vale of Tempe*, distinguished for its delightful temperature and picturesque scenery.

In Macedonia, the principal rivers were the *Strymon* (Jeurboli), *Axius* (Vardar), *Erigon*, *Haliacmon*, and *Echedorus*, said not to be sufficient to supply the army of Xerxes with water

ITALIA OR ITALY.‡

Ancient Italy, next to Greece, is the most interesting country of which history gives an account.

The arts and sciences, originating among the Greeks, were by them taught to the Romans; and through this channel, have been conveyed to us.

The Roman empire, at its greatest extent, was the most powerful which the world has yet witnessed; and Rome, its capital, the most populous and splendid city.

Civil Divisions.—The three large divisions of Italy were Cisalpine Gaul, Italia Propria and Magna Græcia. Cisalpine Gaul was bounded on the north by the Alps, on the east by the

* These waters were said to be so cold and deadly that they proved fatal to those who tasted them. Their wonderful properties suggested the idea that it was a river of hell, especially as it disappeared a little below its fountain head.

† From these, it is supposed Homer took his names of the infernal rivers

‡ See Map No. 3.

Adriatic Gulf; on the South by the river Rubicon, a line drawn from the Rubicon to the Gulf Ligusticus, and the Gulf Ligusticus; and on the west by the Alps. Italia Propria extended from the Rubicon to the Gulf of Urias. The southern part, for a short time only, retained the name of Magna Græcia, and was then included in Italy proper.

The chief divisions of Cisalpine Gaul were

Venetia,	Whose principal cities were *Tergeste* (Trieste), *Patavium* (Padua), *Aquileia*.
Lingones,	*Ravenna* retains its ancient name.
Boii,	*Mutina* (Modena).
Liguria,	*Genua* (Genoa), *Nicæe* (Nice).
Taurini,	*Augusta Taurinorum* (Turin).
Insubres,	*Mediolanum* (Milan), *Ticinium* (Pavia).

DIVISIONS OF ITALY PROPER.

Etruria,	*Florentia* (Florence), *Portus Herculis* (Leghorn), *Veii*.
Latium,	ROME (see description of cities), *Tibur* (Tivoli), where is the great cascade of the Anio, *Alba Longa*, *Appii Forum*, *Praneste*.
Campania,	*Neapolis* (Naples), *Cumæ Puteoli*, *Capua* (Capua), *Herculaneum*, *Pompeii*.
Lucania,	*Pæstum*.
Bruttium,	*Rhegium* (Reggio), *Sybaris*.
Calabria,	*Hydruntum* (Otranto), *Brundusium*, remarkable for the excellence of its harbour. From these two places, was the shortest passage to Greece.
Apulia,	*Venusia* (Venosa), the *Cannæ*.
Picenum.	
Umbria,	*Spoletium* (Spoletto).

GULFS.—*Ligusticus* (Genoa), *Crater* (Naples), *Pæstanus* (Salerno), *Laiis* (Polecastro), *Tarentum* (Tarento), *Urias* (Manfredonia), *Tergeste* (Trieste), *Adriatic Sea* (Gulf of Venice).

RIVERS.—*Padus* (Po). Its branches were the *Trebia*, *Tavus*, *Gabellas*, *Rhenus* (Rheno), *Mincius* (Mincio), *Addua* (Adda), *Ticinus* (Ticeno). Besides the Padus and its branches, were the *Arnus* (Arno), *Tiberis* (Tiber), *Liris*, *Metaurus*, *Aufidus*, *Rubicon*

ISLANDS.—*Sicily*, from its triangular figure, sometimes called *Trinacria*, is the largest and most important island in the Mediterranean; and was, from its fertility, formerly called the granary of the Roman empire. Its chief cities were *Syracuse*, (Syracuse), *Hybla*, famous for its honey. *Messana* (Messina), *Panormus* (Palermo), *Catana* (Catania), *Agrigentum*, and *Lilybæum*. Mount Ætna retains its ancient name. The other islands adjacent to Italy, were *Sardinia* or *Ichnusa*, *Corsica* or *Cyrnus*, *Ilva* (Elba), which last abounded in iron.

The *Æoliæ* or *Vulcania*. *Lipari Isles*, famous for the volcano of *Strombolo* or *Strongylæ* (Stromboli), and *Melite* (Malta).

LAKES.—The lakes of Italy were more remarkable for their beauty than their extent. The principal were *Verbanus* (Magiore), *Larius* (Como), *Benacus* (Gardo), *Fucinus* (Celano), and *Thrasymenus*.

PROMONTORIES.—*Herculis* (Spartivento), *Japygium* (Cape Di Leuco).

On the Italian side of the straits of Messina, anciently called *Fretum Siculum*, was Scylla, a rocky point, and on the Sicilian side was Charybdis, a vast whirlpool

BRITANNIA INCLUDING CALEDONIA *

This country was also called Albion, from the white rocks on its coast. It was divided by the Romans, who effected the conquest of the southern part about the time of the Christian Era, into Britannia Romania, or Roman Britain, and Britannia Barbara, or Barbarous Britain. The last was the northern part, and was also called Caledonia. It was inhabited by the Caledonians and Picts, so called because they painted their bodies.

The Scoti or Scots are not mentioned by writers till some centuries after the Christian Era, and are supposed to have come from Ireland.

The Caledonians preserved in the northern extremity of the island, their wild independence; for which they were not less indebted to their poverty than their valour. The Romans, who, though masters of the fairest and most wealthy part of the globe, had taken much pains to subdue the southern part of the island, turned with contempt from these northern regions, which

* See Map No. 2.

they described as a country of gloomy hills, assailed by wintry tempests; of lakes concealed in a blue mist; and of cold and lonely heaths, over which the deer of the forest were chased by a troop of half naked barbarians.

When the Romans invaded Britain, it was divided into a number of small independent states. At that time, they had hardly any thing answering to our ideas of a city or town. Their dwellings, like those of the ancient Germans, were scattered sometimes on the banks of a rivulet, and sometimes on the skirts of a wood, according as their object was water or game.

The walls built by the Romans were chains of forts, to secure their conquests against the Caledonians. That of Antoninus extended from the Frith of Forth to the Clyde; that of Adrian, from Solway Frith to the Tyne.

The four principal tribes of Britain were, the *Brigantes*, *Silures*, *Iceni*, and *Belgæ*. The sections of the country which each inhabited, was called by the name of the tribe.

Mountains.—The *Grampian Hills* were the only ones to which the Romans gave names.

Seas.—*Britanicus Oceanus* (English Channel), *Verginium Mare* (St. George's Channel), *Mare Hibernicus* (Irish Sea).

Straits.—*Fretum Gallicum* (Straits of Dover).

Rivers.—*Thamesis* (Thames), *Sabrina* (Severn).

Cities and Towns.—*Londineum* (London), *Eboracum* (York), *Aquæ Solis* (Bath), *Venta Belgarum* (Winchester), *Dębris* (Dover), *Alatra Castra* (Edinburgh), *Verulanium* (Verulam), *Lemanis* (Lime,) supposed to be the place where Cæsar first landed.

Islands.—*Hibernia* (Ireland), whose capital was *Eblana* (Dublin), *Vectis* (Wight), *Capiterides* (Islands of Scilly), famous in former days for tin; *Mona* (Anglesea), *Ebudes* (Hebrides), *Orcades* (Orkney Islands).

Promontories.—*Bolerium* (Land's End), *Ocrinima* (Lizard's Point).

GALLIA OR GAUL.

The Greeks called this country Galatia. The Romans named it Gallia; its inhabitants gave it the name of Celtica The Romans considered it as being divided by the Alps into two parts, of which, that nearest Rome was called Cisalpine Gaul, and that beyond the Alps, Transalpine Gaul.

Gallia Cisalpina comprehended the northern part of Italy, Gallia Transalpina, France, Holland, Switzerland, and a part of Germany.

Gallia Transalpina was divided by the Romans into four provinces.

NARBONENSIS,	*Vienna*, (Vienne), *Massilia* (Merseilles), *Tolosa* (Toulouse), *Forum Julii* (Frejus).
LUGDUNENSIS,	*Lutetia* (Paris), *Genabum* (Orleans), *Lugdunum* (Lyons).
AQUITANIA,	*Burdigala* (Bourdeaux).
BELGICA,	*Duvidorum* (Metz).

MOUNTAINS.—*Vogesus* (Vosges), *Jura*.

RIVERS.—*Rhine* (Rhenus), *Rhone* (Rhodaus), *Liger* (Loire), *Garumma* (Garonne), *Sequana* (Seine), *Scaldis* (Scheldt), *Mosa* (Meuse).

HISPANIA OR SPAIN.

This country was called by the Greeks, Iberia, and also from its remote situation towards the west, Hesperia. It was divided by the Romans into two provinces, Citeriour and Ulteriour, nearer and farther, that is, from Rome. Hence, in Roman history, it is sometimes called the two Spains. At a later period, the emperor Augustus divided it into three provinces, the Ulteriour into Betica and Lusitania, and to the Citeriour he gave the name of Tarraconensis.

Cities of Tarraconensis,	*Tarraco* (Tarragona), *Emporiæ* (Ampurias), *Pompelo* (Pampeluna), *Carthago Nova* (Carthagena), *Numantia*, *Saguntum* (Morviedro), Segovia.
Bætica,	*Hispalis* (Seville), *Gades* (Cadiz), *Corduba* (Cordova).
Lusitania, now Portugal,	*Osilippo* (Lisbon).

RIVERS.—*Tagus* (Tajo), *Iberus* (Ebro), *Bætis* (Guadalquivir), *Anas* (Guadiana), *Minius* (Minho), *Durius* (Douro).

STRAITS.—*Fretum Herculaneum* (Strait of Gibraltar).

MOUNTAINS.—Pyrenees, which retain their ancient name.

ISLANDS.—*Beleares*, *Major*, *Minor*, and *Pelyuse*, (Majorca, Minorca, and Ivica.)

PROMONTORIES.—*Sacrum* (Cape St Vincent), *Artabrum* (Cape Finisterre).

GERMANY.

Germany included the country between the Rhenus and the Vistula, having the sea on the north, and the Danube on the south. The Germans had no regular cities. They were not allowed even a continuity of houses. But in their villages, each house stood detached, with a vacant space around it; the inhabitants were annually removed from one place to another, that they might not lose their military spirit by acquiring a taste for agriculture.

The manners of the ancient Germans appear to have been similar to those of the American Indians. The forests and morasses were filled with a hardy race of barbarians, who despised life when separated from freedom. The principal of these were the *Allemani*, from whom Germany is called in French *Allemagne*.

Among the natural features of ancient Germany, its forests were distinguished.

Its principal rivers were the *Visurgis* (Weser), *Albis* (Elbe), *Viadrus* (Oder), *Vistula* (Vistula), and *Ister* (Danube).

SCANDINAVIA, CALLED ALSO SCANDIA.

Of this country, the ancients had a very imperfect knowledge, supposing it to be a large island or collection of islands. Modern writers on Ancient Geography are therefore necessarily at a loss with respect to its precise boundaries. Most writers confine the name to the peninsula west of the Baltic, together with the territory north of that sea; but others say that Scandinavia included also the country lying east of the Baltic, and that it comprehended Norway, Lapland, and Finland.

COUNTRIES EAST AND NORTH OF GREECE.*

THRACE was a wild country, fertile only in places near the sea, and inhabited by nations addicted to rapine. In the subdivisions of the Roman Empire, during the age of Dioclesian and Constantine, Thrace was formed into many provinces. That part which extended to the Propontis, was called Europa. West of Europa the province of Hæmimontus extended to the Hebrus. Rhodope bordered upon the Ægean Sea. Thracia was the country towards the sources of the Hebrus.

*For these countries see Maps No. 2 and 3

Its principal cities were *Byzantium* or *Constantinople*, (see description of cities,) *Lysimachia*, *Ægos*, *Potamos*, *Sestos*, *Heraclea*, *Apollonia*, *Berea*, *Hadrianopolis* (Adrianople), *Trajanopolis*, *Philipopolis*, *Nicopolis*, *Neapolis*.

The gulf of *Melas* extended into the southern part of Thrace.

ISLANDS.—South of Thrace were *Samothrace* (Samothraki), and *Thasos* (Tasse). Thasos was distinguished for its beautiful white marbles.

RIVERS.—The *Hebrus* (Maissa), and its branches; and the *Nestrus* (Nesto).

Mount Hæmus separated Thrace from Mœsia. From the top of this mountain, it is said, the Euxine and Adriatic Seas were both visible. *Rhodope* was in the western part.

MŒSIA extended from the Euxine, between Mount Hæmus and the Danube, to the junction of that river with the Savus. Mœsia was divided into superior, including the western, and inferior, the eastern part.

CITIES.—*Singidunum* (Belgrade), *Nicopolis*, (Nicopoli), *Odessus*, *Marcianopolis*.

RIVERS.—*Iatrus*, *Œscus* (Esker), *Timacus* (Timok), and *Margus* (Morava), branches of the *Ister* (Danube).

DACIA occupied the country south of the Carpathian Mountains and the Tyras, and north of the Danube. Its western boundary was the Danube; its eastern the Tyras and Euxine.

Its chief city was *Ulpia Trajana* or *Sarmigezethus*.

The branches of the Ister in Dacia were, the Tibiscus (Tiess), *Margius* (Maros), *Ararus* (Siret), *Pyretus* (Pruth).

PANNONIA extended along the southern bank of the Danube, from the mouth of the Savus to Noricum. Its northern and eastern boundary was the Danube; southern, Illyricum; western, Noricum.

Its principal cities were *Vindobona* (Vienna), *Arrabona* and *Sirmium*.

This country received the *Dravus* (Drave), as it issued from Noricum, and comprehended the greater part of the course of the *Savus* (Save).

ILLYRICUM was on the Adriatic. Its chief divisions were Liburnia and Dalmatia.

CITIES.—*Epidaurus*, *Salona*, *Andetrim*, *Metulum*.

NORICUM bordered on the southern shore of the Danube, from Pannonia to the mouth of Œnus.

Its principal cities were *Juvavum*, *Lauriacum*, and *Virunum*.

RHŒTIA was west of Noricum, bordered on the south by the Alps, and on the west by the same mountains, as far as to Lake Brigantinus. From this lake to the mouth of the Œnus was Vindelicia.

Tridentum was the principal city of Rhœtia.

Brigantia (Bregentz) was on lake *Brigantinus* (Constance,) in Vindelicia.

ASIA.

Asia has in some respects been honorably distinguished from every other part of the globe. Tracing backward the course of history, we should be led by sacred, as well as by profane writers, to believe that it was here the human race had their first origin; and it was here that the founder of a religion which has already spread over the most enlightened parts of the earth, lived and died.

ASIA MINOR.*

This name was unknown to the ancients; but the country it denotes was divided into many independent kingdoms. Asia Minor, in its ancient state, is interesting to readers of profane history, but still more to those who study the sacred. Here St. Paul wandered through many perils to promote the cause of Christianity, and here by his ministry some of the earliest churches were founded.

Divisions of Asia Minor.

Countries.	*Cities and Towns.*
PONTUS,	*Trapezus* (Trebizond) *Amisus*, *Amasea* (Amisea), *Cerasus*, *Comana*.
PAPHLAGONIA,	*Sinope*, *Amastris*, *Gangra*.
BITHYNIA,	*Heraclea*, *Nicomedia*, *Hadrianopolis*, *Prusa* (Bursa), *Apamea*, *Nicæ* (Nice). *Chalcedon*.
MYSIA.	*Cyzicus*, *Apollonia*, *Pergamus*.
TROAS,	*Ilium, or Troy*. (It was situated at the junction of the rivers Simois and Scamander), *Assos*.
ÆOLIA.	

* See Map No. 3

IONIA,	*Smyrna* (Smyrna,) *Ephesus* (Ephesus, see description of cities,) *Clazomene*, *Colophon*, *Mycale*, *Miletus*.
CARIA,	*Halicarnassus*, *Cnidus*.
LYCIA,	*Patara*, *Xanthus*.
PAMPHYLIA and PISIDIA,	*Perga*, *Attalia*, *Antioch*.
CILICIA,	(Cilicia was so surrounded by mountains that it had but few passages, and these very narrow). *Tarsus*, *Antiochia*, *Issus*.
CAPPADOCIA,	*Mazaca*, or *Cesarea*.
ARMENIA MINOR.	
PHRYGIA,	*Apamea*, *Thymbryum*, *Hierapolis*, *Laodicea*, *Colossæ*.
ISAURIA, LYCAONIA,	*Iconium*, *Lystra*, *Derbe*.
LYDIA,	*Sardis*, *Philadelphia*, *Thyatira*.
GALATIA,	*Gordium*.

MOUNTAINS.—The mountains of *Taurus* extended through the southern part of Asia Minor. *Anti-Taurus* and *Amanus* were in the eastern part. *Cytorus*, in Paphlagonia; Mounts *Olympus*, *Cragus* and *Anti-Cragus*, in Lycia; another *Olympus* in Bithynia; Mount *Ida*, in Troas; *Mycale*, in Ionia.

PROMONTORIES.—*Carambis* (Karempi), *Jasonium*, *Sigeum*, *Lectum*, *Trogyllium*, *Sacrum*, *Anemurium*.

GULFS AND BAYS.—Bay of *Amisus*, Gulf of *Adramyttium*, *Smyrna*, *Glaucus*, Bay of *Issus*.

ISLANDS.—The islands in the east part of the Ægean Sea, were called *Sporades*; and commonly annexed to Asia, though peopled by Greeks. Near Lycia is the island of *Rodes*, or *Rhodus*. The other Islands are *Cos* or *Coos*, *Patmos* (Palmossa), where St. John wrote his Revelations, *Samos*, *Icaria*, (Nicaria), *Lemnos*, *Scios*, (Scio, famous for its wines,) *Lesbos*, whose chief city was *Mitylene*, by which name the island is now called.

RIVERS.—*Halys* (Kizil-Ermak, or Red River,) *Iris*, *Thermodon*, *Parthenius*, *Rhyndacus*, *Esopus*, *Granicus*, *Sangaius*, *Caicus*, *Herunis*, or *Hermus* (Sarabat), *Meander*, (celebrated for its winding course), *Xanthus*, *Limyrus*, *Cestrus*, *Eurymedon*, *Sarus*, *Pyramus*.

There was a river named *Melas*, in Pamphylia; likewise one in Cappadocia. There were rivers named *Lycus* in Pontus, Bithynia, and Phrygia.

COUNTRIES BETWEEN THE EUXINE AND CASPIAN SEAS.*

These countries were mountainous, but extremely fruitful.

COLCHIS extended along the eastern coast of the Euxine, from the mountains of Caucasus to Pontus. Its principal cities were *Phasis*, situated on a river of the same name; *Cyta*, *Æa*, *Dioscurius*, *Pityus*.

IBERIA had Mount Caucasus on the north. A range from Caucasus separated it from Colchis, and another from Albania *Harmozica* was its principal city.

ALBANIA extended from Iberia to the Caspian Sea. Its principal city was *Albania Pylæ*.

Rivers.—*Araxes* (Arras), *Cyrus* (Kur).

ARMENIA was south of these countries: *Artaxata* (Ardesh) was its capital; the other towns were, *Tigranocerta* and *Amida* (Diarbeck).

Mountains.—*Niphates* and *Ararat* were the principal.

The rivers Tigris and Euphrates take their rise in this country.

Lake Arsissa (Lake Van) was in the southern part of Armenia.

COUNTRIES BETWEEN THE MEDITERRANEAN AND THE EUPHRATES.†

SYRIA. This country had Mount Taurus on the north. It extended along the Mediterranean sea to Tyre, and was bounded on the east by Arabia and the river Euphrates. It was divided into Syria Prima, Syria Secunda or Salutaris, Phœnicia Proper, Phœnicia Libani, and Syria Euphratensis. Commagene was a part of the Euphratensis. Cœloe-Syria was a name given to that part of Syria Lybani which lay between the ridges Libanus and Anti-Libanus.

Cities and Towns.—*Antiochia* (Antioch) *Seleucia*, *Daphne*, (celebrated for its groves of cypress and laurel, and cool fountains) *Beræa* (Alleppo), *Samosata*, *Zeagma*, *Hierapolis*, *Alexandria* (Scanderoon), *Damascus*, *Balbec* or *Heliopolis*, (Balbeck), *Palmyra* in very ancient times, *Tadmor*. *Tyre* and *Sidon* retain their ancient names; (Tyre was famous for its purple dye).

Rivers.—*Orontes*, *Eleutheris*, *Lycus*.

---

* See Map. † See Maps No. 2 and 5

MOUNTAINS.—*Libanus*, *Anti-Libanus*.

The island of *Cyprus* was west of Syria. Its principal cities were *Salamis*, *Amathus*, and *Paphos;* Mount Olympus was in the western part.

PALESTINE was the country of the Philistines, or that country which extended from Joppa to Gaza.

JUDEA, and afterwards the *Holy Land*, were names given to the country which extended from Syria to Egypt, and to this country many modern writers have extended the name of Palestine.

This was a country of mountains and valleys, hills and plains. The soil, though at present barren, was, in ancient times, fertile, producing plentifully grass for cattle, and herb for the service of man.

This country was divided among the twelve tribes of Israel, *Judah*, *Simeon*, *Benjamin*, *Dan*, *Ephraim*, *Manasseh*, *Zabulon*, *Issacher*, *Naphtali*, *Asher*, *Gad*, *Reuben*.

The Moabites were west of the lake Asphaltites. The Ammonites east of Peræa. Idumæa, or the Land of Edom, was south of Palestine.

After the return of the Jews from captivity, Judea was divided into four kingdoms:

JUDÆA,	*Jerusalem*, *Bethlehem*, *Gaza*, *Gath*, *Ascalon*, *Azotus*, *Ekron*, *Ephraim*, *Gophna*, *Emmaus*, *Engaddi*, *Hebron*, *Jericho*.
SAMARIA,	*Joppa*, *Lydda*, *Cesarea*, *Sychar*, *Sichem*, *Samaria*, or *Sebaste*.
GALILÆA,	*Canaan*, *Nazareth*, *Tiberias*, *Genesareth*, *Bethsaida*, *Capernaum*, *Jotapata*, *Nain*, *Ptolemais*, or *Acco*(Acre), *Chorazen*, *Cesarea-Philippi*.
PERÆA,	*Decapolis* included the cities of *Scythopolis*, *Gadara*, *Hippos*, *Pella*, *Dium*, *Gerasa*, *Philadelphia*, *Abila*, and *Capitolais*.

Rabbath Moab was the principal city of the Moabites.

LAKES and RIVERS.—Lake *Asphaltites*, from its stagnant waters, is now called the Dead Sea. This lake is so salt, that neither animals nor vegetables can live in it. It is supposed to occupy the place where Sodom and Gomorrah once stood. It was united to the *Sea of Tiberias*, or *Lake of Galilee* by the river *Jordan*. The other streams were the river *Arnon* and brook *Kedron*.

MOUNTAINS.—*Hermon*, *Gilead*, *Abarim*, *Nebo*, *Pisgah*, *Gerizim*, *Seir*, *Carmel*, *Tabor*.

ARABIA.*

The ancient, as well as modern divisions of Arabia were *Arabia Petrea*, *Arabia Felix*, and *Arabia Deserta*.

The land of Uz, Midian, and the country of the Sabai, were in Arabia.

Cities.—*Macaraba* (Mecca), *Madian*, *Elana*, *Eziongeber*, *Petræ*, *Sabatha*, *Mariaba*. *Tylos* was an island in the Persian Gulf, famous for its pearl fishery.

ORIENTAL COUNTRIES.

MESOPOTAMIA was situated between the Tigris and Euphrates. It was called in Scripture Aram. According to Strabo, it was fertile in vines.

Cities.—*Edessa*, *Nicephorium*, *Is* or *Eiopolis*, *Nisibis*.

The *Mygdonius*, a branch of the Euphrates, was the principal river of Mesopotamia.

ASSYRIA was called by some of the ancients, Adiabene, and by some Aturia or Atyria.

Provinces.	*Cities.*
Corduene, Aturia, Adiabene, Garamæi, Chalonitis,	*Ninus* or *Nineveh*, (see description of cities,) *Seleucia* (Bagdat), *Ctesiphon*, *Demetrius*, *Opis*, *Arbèla*, *Gaugamela*.

Rivers.—*Lycus* or *Zabus*, *Caprus*, *Physcus*, *Gyndes*, *Choaspes*.

The *Zagros* mountains separated Assyria from Media

	Cities.
Chaldea, Babylonia,	*Babylon* or *Babel*, (see description of cities) *Bologesia*, *Alexandria*.

MEDIA.—The northern parts of this country lying between the mountains and the Caspian Sea, were extremely cold and barren, but the southern were more fertile. It was divided into several provinces.

Provinces.	*Cities.*
Atropatene, Commisene, Articene, Sabiene, Matiana,	*Ecbatana*, (Hamadan), *Gaza*, *Hecatompylos*, *Caspii*, *Pylæ*, *Rages*.

In the western part of Atropatene was a salt lake, called

* See Map No. 2

Spanta or *Marcianus*. Many plains in the southern part of Media were also covered with salt.

SUSIANA was divided into two provinces, *Elymais*, and *Cissia*. Its capital was *Susa*, called in Scripture *Shusan*.

PERSIA was anciently called Elam. The kingdom of ancient Persis at its greatest extent, included all the countries from the Hellespont to the Indus, above 2,800 miles, and from Pontus to the shores of Arabia, above 2,000 miles. The province of Persis or Persia Proper is now Fars. Its principal cities were *Persepolis* (Estakar, see description of cities), *Aspadana* (Ispahan), *Pasagardæ*.

CARMANIA, GEDROSIA, } CITIES.—*Harmosia*, *Carmana*.

ARIA, *Articoana* or *Aria Alexandria* (Candahar).

BACTRIANA, *Bactra* (Balk).

SOGDIANA, { *Maracanda* (Samarcand), *Gabæ*, *Alexandria* or *Cyreschata* (Krojund).

HYRCANIA, *Hyrcania*, *Zadracarta*, *Syringis*.

INDIA. This extensive country was divided by Ptolemy and the ancient geographers into *India within* and *India beyond the Ganges*. The first division answers to the modern division of Hindoostan; the last to the Birman Empire, and to the dominions of Pegu, Siam, &c. India took its name from the Indus, which formed its western boundary. The peninsula of Malaya was known by the name of *Aurea Chersonesus*.

CITIES.—*Taxila*, *Aornos*, *Caspira* (Cashmere), *Serinda*, *Sogdi*, *Alexandria*, *Nysa*.

RIVERS.—The principal branches of the *Indus* were the *Hydaspes*, *Acesina*, *Hydraotes*, and *Hyphasis*. The *Condochates* and *Jomanes* were branches of the *Ganges*.

GULFS.—*Barygazenus* (Cambay), *Great Bay* or *Magnus Sinus* (Siam.)

ISLANDS.—*Salice* or *Taprobana* (Ceylon). *Jabadii* (Sumatra).

SCYTHIA was a general name given by the Greeks and Romans to a large portion of Asia, and was divided by them into *Scythia within* and *Scythia beyond Imaus*. Scythia within Imaus was bounded on the west by the Rha and Asiatic Sarmatia, on the north by unknown countries, on the east by part of the chain of Imaus, and on the south by the country of the Sacæ, by Sogdiana and the Caspian. Scythia beyond Imaus was bounded on the north by unknown countries, on the west by Imaus, on the south by India, and on the east by Serica.

A considerable nation of Scythia was the Massagetæ or Great Getæ, whose principal dwelling was north of the Jaxartes. South-east of these was the great nation of the Sacæ, and north of the Sacæ, were placed the Seres, whose country was Serica.

The *Annibi* mountains correspond with the Altain. Its chief city was *Issedon*.

But little was known of the Sinæ, placed east of Serica, or the tribe of the name placed east of India.

SARMATIA. This country was divided into *European* and *Asiatic* Sarmatia; the first, bounded on the north by the Ocean, on the west by Germany and the Vistula, and extended to the Euxine on the east, being parted from Asiatic Sarmatia by the Cimmerian Bosphorus, Palus Mœotis and Tanais. Asiatic Sarmatia extended from the Tanais, bounded south by the Euxine sea and mountains of Caucasus, around the northern shore of the Caspian sea. In the east its rivers were the *Rha* (Wolga), *Rhymicus*, and *Daix*, which fell into the Caspian. In the west was the *Hypanis* which fell into the Euxine.

AFRICA.

The state of learning and civilization in some parts of Africa, was much better in ancient than in modern times.

AFRICA PROPER included the celebrated republic of *Carthage*, which about three hundred years before the Christian era, was superior to Rome itself in respect to many of the arts, particularly that of navigation. Besides Carthage, its cities were *Zama*, *Utica*, *Adrumetum*, *Tunis*, *Thapsus*, *Capsa*.

The river *Bagradas* passed through this country and Numidia.

EGYPT, a little before the Christian era, was one of the first countries of the ancient world, and in point of commercial importance it exceeded all its contemporaries. It was distinguished for its superiority in science and art, and for its canals, pyramids, and other public works, whose unrivalled grandeur is attested by the ruins which still exist.

Divisions.	*Cities and Towns.*
LOWER EGYPT.	*Alexandria*, (see description of cities), *Nicopolis*, *Pelusium*, *Heroopolis*, *Latopolis*, *Arsinoe* (Suez). From this place a canal was cut to one of the branches of the Nile

Divisions.	*Cities and Towns.*
HEPTANOMIS OR THEBAIS OR UPPER EGYPT,	*Memphis*, (see description of cities,) *Ptolemais*, (Girge), *Coptos*, *Syene*, *Thebes* or *Diospolis*, (see description of cities).

NUMIDIA was separated from Mauritania by the river *Ampsagas*. *Cirta* was its capital.

MAURITANIA, (from which the Moors derive their name), was the seat of numerous Roman Colonies, established on its coasts.

LYBIA was properly the country bordering on the great Syrtis. The name was used by the Greeks for the whole of Africa. Its divisions were *Cyrenaica*, and *Marmarica*.

TRIPOLIS lay between the *Syrtis Major* (Gulf of Sidra), and the *Syrtis Minor*, (Gulf of Cades). It received this name from its containing three principal cities; *Septis*, *Œa*, (Tripoli), and *Sabrata*.

CITIES.

View of the most Important Cities of the Ancient World.

BABYLON was long the most celebrated city of the world. The walls built of large bricks, cemented by bitumen, were 350 feet high, 87 feet thick, and 60 miles in circumference. The form of the city was a square, its sides subtending the four cardinal points. The towers on the walls were only 250 in number, several places being surrounded by marshes, and therefore sufficiently secure without towers. There were 100 gates—25 on each side, all of solid brass. From these ran straight streets intersecting one another, and dividing the city into squares. Around these squares stood the houses, separated by certain intervals, and three or four stories high. The space in the middle of each square was generally laid out in gardens, but pasture grounds for cattle were reserved.

In the centre of the city stood the Temple of Belus, a massy square edifice, half a mile in extent every way. The river Euphrates flowed through it, and over this river was a

bridge more than half a mile in length. At the end of the bridge were two palaces that communicated with each other by a vault built under the channel of the river. Before the bridge and vault could be built, a lake 37 miles square and 35 feet deep, was dug to receive its waters. After this was completed, the river was again permitted to flow in its ancient channel.

The hanging gardens were works scarcely less stupendous. They are said to have contained a square extending 400 feet on each side. They consisted of terraces rising one above another, like the seats of a theatre, and carried up to the height of the walls of the city. These terraces were supported on arches, and were watered from the Euphrates by means of engines. Large trees grew upon them, and they had, at a distance, the appearance of a woody mountain, intermixed with the most beautiful flowers and plants of all kinds.

The ruins of Babylon are found, by modern travellers, in the vicinity of Hellah. They consist chiefly of immense piles of bricks cemented by bitumen, some of which stretch along the plains 1650 feet, and rise to the height of 60 feet. By far the most stupendous and surprising ruin is called by the Arabs, "*Birs Nimrod*," by some supposed to have been the tower of Belus. It is a mound or hill of ruins, 198 feet in height and 2280 feet in circumference.—On its summit is a solid pile 37 feet in height, formed of fine burnt bricks, covered with inscriptions.

NINEVEH exceeded all the early cities of Asia, except Babylon. Its walls were 100 feet high and so broad that three chariots could be driven on them abreast. They were 48 miles in circuit and defended by 1500 towers; each 200 feet in height. Some vestiges of the ruins of Nineveh are supposed by late travellers, to exist on the east bank of the Tigris, opposite Mosul.

JERUSALEM was built on four hills, Sion, Acra, Moriah, and Bezetha, or Kainopolis, that is, the new town. It was surrounded by a triple wall, about 8 miles in circumference. On Moriah stood that magnificent building, the temple, which was also a kind of fortress. The city was situated on a stony soil, and the country around it for several miles being dry and barren, it was not well supplied with water. Its principal fountain was called Siloa, or Gihon. The modern city which is built on the ruins of Kainopolis, is small in comparison with the ancient

Palmyra is thought to have been the Tadmor in the Desert, built by Solomon. Its splendid ruins, which mark its former magnificence, consist of temples, palaces, and porticoes, of Grecian architecture, scattered over an extent of several miles. Of these, the most remarkable is the temple of the Sun.

Balbeck or Heliopolis had also a most magnificent temple of the Sun, the ruins of which form the most conspicuous object, amidst the gloomy remains of its ancient grandeur.

Persepolis, burnt by Alexander the Great, exhibits in its extensive ruins, some traces of its ancient splendour. These are found near Estakar.

Ephesus, now a mass of ruins, was an illustrious Greek city. Here was the celebrated temple of Diana, which was 220 years in building, and which was burnt on the night that Alexander was born, by one Erostratus, who determined to do something for which his name should be remembered. It rose however from its ruins, with superior splendour. It was 225 feet in length and 200 in breadth. The roof was supported by 127 columns 60 feet high.

Thebes or Diospolis, extended on both sides of the Nile, and from the extent of its astonishing ruins, it must have been 27 miles in circumference. At Luxor, the largest village on the ruins, stands the temple of Memnon, which, although less extensive than several other temples of this city, is now in a better state of preservation.

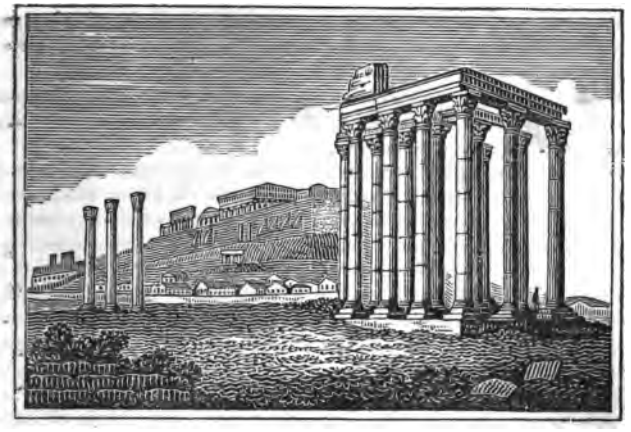
The European traveller, on entering the ruins of Thebes, is struck with the peculiar features, and colossal dimensions of every thing about it. The smallest pillars of the temples are seven and a half feet in diameter—some of the largest, eleven. Huge images of stone, sometimes of 100 feet in height, placed in different postures, obelisks, sphinxes, and other ruins, which tower above the surrounding palm-trees, make him "feel as if he had entered a land of giants."

On the western bank of the Nile, 15 miles south of the Delta, was Memphis, the ancient metropolis of Egypt. Since the fifteenth century even its ruins have entirely disappeared.

Near this place are the Pyramids. These stupendous fabrics, according to the accounts of travellers, are forty in number. Three of them are larger than the others. The largest is about 500 feet in height, and covers eleven acres of ground. In the vicinity was the lake Mœris, at the south of which was the famous labyrinth that was said to contain 3000 chambers. This, as well as the pyramids, was used for burying places for the kings.

ALEXANDRIA. The plain of Alexandria was first laid, and the city built by Alexander the Great. It was situated about twelve miles west of the mouth of the Nile, between Lake Mareotis and the island of Pharos, which was joined to the main land by a mole or causeway, near a mile long, with a bridge at each end of it. The beautiful and regular form of this great city, second only to Rome, comprehended a circumference of fifteen miles. The commodities of India and the East were diffused from the port of Alexandria over the Western world. It was distinguished for its schools of theology, philosophy, and physic, but it owned its more lasting fame to its splendid library This collection consisted of 700,000 volumes, and was destroyed by the Saracens, A. D. 642. Its population was 300,000 free inhabitants, besides an equal number of slaves. Its modern name is Scanderia, though its ancient name is more common among Europeans.

CARTHAGE, with its ports, comprehended a space of 25 miles in circumference. But few of its ruins are now remaining.



Ruins of Athens and the Temple of Jupiter.

ATHENS was the most distinguished city of Greece, and is more deserving our particular attention, than any other city of the ancient world, if we except Rome; and even Rome derived from Athens the elegant arts, by which it was embellished.

Athens at first consisted of a citadel built on the top of a high rock, seven miles and a half round, called Cecropia from Cecrops, its founder and first king. When from the increase of its inhabitants, the lower grounds were occupied by buildings, the citadel was called Acropolis, or the upper city; the buildings on the plain, the lower city.

In the citadel were several magnificent edifices, the chief of which was the temple of Minerva, called Parthenon, which was burnt by the Persians and rebuilt by Pericles. It is still standing, and is justly esteemed one of the noblest remains of antiquity. It is 229 feet long, 101 broad, and 69 high.

Of the temples in the lower city, the most remarkable, and indeed one of the most magnificent, in the ancient world, was that of Jupiter Olympus. It was supported on marble columns, the first that were constructed at Athens, and was half a mile in circuit. On an eminence called the hill of Mars, at a small distance from the citadel, was the place of meeting of that celebrated council, called the Areopagus.

Athens was situated at the junction of the Ilisus and Cephi-

sus; but it had three harbors on the Saronic Gulf, which were joined to the city by two walls, called the long walls. One of these was five miles in length, the other not quite so long.

There were several Gymnasia, or places of exercise, in and near Athens, the principal of which were the Academy, the Lyceum, and the Cynosarges.

A Gymnasium was a large edifice fit to contain many thousands of people at once, with proper places for the youth to perform their various exercises, and apartments for philosophers, rhetoricians, and all the professors of the liberal arts to deliver their lectures, surrounded by a garden and sacred grove.

The Academy was just without the walls of the city near the Cephisus. Near it the celebrated philosopher, Plato, had his residence on a farm belonging to himself, and in it he taught his scholars; which were hence called Academics.

The Lyceum lay on the opposite side of the city, along the banks of the Ilissus. Aristotle, the scholar of Plato, having returned to Athens, after superintending the education of Alexander the Great, chose the Lyceum as the place of his school. Aristotle taught those who attended him, walking, in the Peripatos or walking place of the Lyceum; hence his followers were called Peripatetics.

The Cynosarges lay a little north of the Lyceum on a rising ground. The most noted philosophers who taught here, were Diogenes the Cynic, and Zeno the founder of the sect called Stoics.

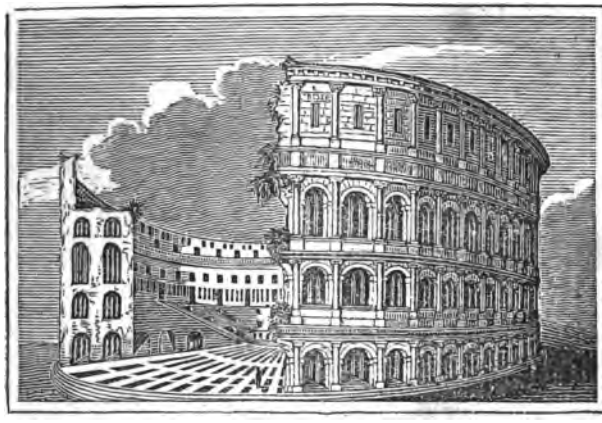
By an account taken under Demetrius Phalereus, soon after the time of Alexander, the inhabitants of Athens amounted to 440,000, of whom much the greater part were slaves.

Sparta, of which a few ruins are found near the modern Misitra, was situated at the foot of Mount Taygetus. It was six miles in circumference, the houses small and without ornament, not built close together, but divided into different villages according to the ancient manner of the Greeks. It was not surrounded by walls, till it fell under the dominion of tyrants after the time of Alexander the Great.

Thebes was surrounded by a wall five miles and a half in circumference, having seven gates.

Byzantium was made the seat of the Roman Empire by Constantine the Great A. D. 330. Among the causes, which induced him to prefer it to Rome, was the peculiar beauty of the situation.

It occupied a point of land between the Propontis and a long cove, which formed an excellent harbor. Constantine greatly enlarged its limits, and made it resemble Rome by covering seven hills. What was the ancient city, is now occupied by the seraglio.



Coliseum, or Amphitheatre of Titus.

Rome was founded by Romulus on the Mons Palatinus or Palatine hill. By degrees it was extended to cover six other hills, Mons Capitolinus, Quirinalis, Viminalis, Esquilinus, Cœlius, and Aventinus. Its walls were 13 or 14 miles in extent, and it had 37 gates. The Palatine hill was the residence of the kings and emperors. On the Capitoline were the Capitol, and the Tarpeian Rock from whence condemned criminals were thrown. At the foot of the Capitoline Hill was the Forum, where the people listened to the harangues of their orators. Along the Tiber was the Campus Martius, where they assembled to give their votes, and where the youth performed their exercises. The aqueducts, which supplied Rome with water, were carried over valleys for many miles, supported on brick arches reared at prodigious expense. Some suppose the suburbs of ancient Rome to have been so extensive, that including them the city was 50 miles in circuit: but that they were inhabited only by people of inferior rank, as no remains of splendid edifices are found without the walls. The number of its inhabitants in the reign of Trajan is supposed to have been four millions.

The ancient wall is generally preserved and exhibits a great variety of materials and workmanship, in the repairs of different ages. Some of the gates are still in use.

A great part of the modern city is built on the Campus Martius, and most of the space within the walls is now covered with ruins, or laid out in gardens and vineyards.

Rome was the capital of the most important empire with which history presents us. It was enriched by its sovereigns with the spoils of the numerous and populous countries which they conquered. The immense obelisks of a single block of granite, which were transported from Egypt, still remain to show the vast labor and expense which they incurred to adorn Rome with the trophies of a conquered world. Had we no evidence of its opulence and splendor but the accounts of historians, we should consider these exaggerated; but they are fully confirmed by the numerous ruins of magnificent structures, with which the modern city abounds.

The Pantheon is the only entire specimen of Roman architecture which has survived the wreck of ages. Its immense dome 150 feet in diameter, its beautiful marble pillars of a single piece 42 feet in height, and its massy doors of brass, still remain in their original state.

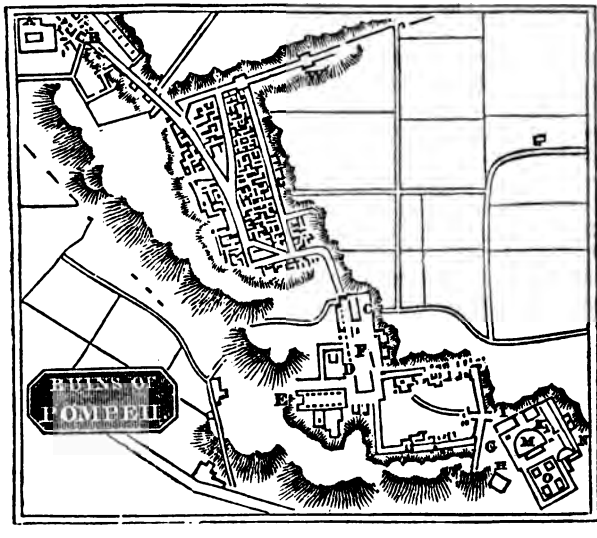
The baths of Dioclesian and Caracalla furnish noble specimens of the grandeur and extent of such edifices in ancient Rome. They contained not only baths and an immense basin for swimming, but around them; libraries, rooms for refreshments and halls for exercise, places of amusement and even temples. The baths of Dioclesian cover a great extent of ground, and a single hall now forms a church of considerable size. The baths of Caracalla occupied a square of a quarter of a mile in length and nearly the same in breadth, and its halls surpass most modern churches in loftiness and size. The specimens of statuary found in these ruins are the admiration of the world, and with the paintings found in the baths of Titus, fully prove, that the elegance of these ornaments corresponded to the grandeur of the buildings.

The mausoleum of Adrian forms the modern castle of St. Angelo, and the tomb of Augustus is so capacious that it is used as a theatre. From the hill of the ancient capitol you see on one side the Palatine Mount, covered with the majestic ruins of the palace of the Cæsars. On the other, is the triumphal column of Trajan, towering to the height of 120 feet. In front are the Forum and the Sacred Way, with the ruins of six tem-

ples and three magnificent triumphal arches. The arches of Constantine and Severus are still almost entire.

The Sacred Way terminates with the Coliseum; the most remarkable of all the monuments of Rome. It is sometimes called the amphitheatre of Vespasian, and sometimes of Titus; because it was built by these two princes. It is more than 1600 feet in circumference and was capable of containing 100,000 spectators. It consists of four stories; the lower adorned with columns of the Doric order, the next, of the Ionic, and the two upper, of the Corinthian. In this, and other similar edifices, were exhibited the battles of gladiators with each other, and with wild beasts; and probably on this very spot, thousands of martyrs were exposed to the rage of ferocious animals, and shed their blood for the religion of Christ.

From these facts, we gain instruction, not only with respect to the manners of the people in those ages, but also concerning the disposition of their rulers.



Herculaneum and Pompeii, considerable towns near Naples, were overwhelmed by a dreadful eruption of Vesuvius,

A. D. 79.* Herculaneum was discovered in 1713, and Pompeii about 40 years after. Herculaneum is covered with a mass of solid lava to the depth of 60 or 70 feet, on which the modern village of Portici is built; and the excavations are entirely subterranean.

Pompeii was buried in a shower of sand and ashes, which formed a hill over its ruins, now covered with vineyards. A passage has been excavated through this hill, from the northern to the southern wall of the city, several streets have been opened to the light, and numerous public edifices, private dwellings, and sepulchral monuments, have been discovered. In the language of a recent traveller, "We have already seen many of the monuments of the pride and power of the ancient Romans; but we had never before been admitted into their domestic retirements nor permitted to judge of their wants or their comforts." Their dwellings, gardens, and shops, their baths, temples, theatres, and halls of justice, remain in the state in which they were left; and some contained the skeletons of the unhappy occupants in the attitude of flight, or in places of concealment. Furniture, kitchen utensils, instruments of art, and even a library of books, and some articles of food and clothing reduced to charcoal, still remain for our inspection.

The houses are built in the style still common in the east, usually of one story, and without chimneys, with a central court often surrounded by a colonnade. The chambers are small, but lofty, usually opening into the court, and receiving all their light through the door. They seldom communicate with each other. They were finished with great neatness, the floors usually paved with Mosaic work, and the walls colored or adorned with paintings often exhibiting their amusements and their vices. The streets are narrow, often only 6 or 8 feet in width, and never more than 24. They are furnished with sidewalks for foot-passengers, and like modern Naples, are paved with lava. The deep traces worn by the cart wheels prove the antiquity of the city when it was destroyed. At the corners of the streets there were reservoirs of water or public fountains, most of which are still remaining. Many of the statues which adorned their temples, theatres, and public places, have been preserved. Sometimes the household gods were found, and in one instance a private chapel, with its altar and its deity.

* The plan and description of Pompeii, and the account of the present state of Rome, were furnished by Mr. Woodbridge, who visited those cities in 1821.

"These venerable objects seem to come forth as from their tomb, where no modern hand could have disturbed them, to instruct us concerning the times in which they were interred."

Explanation of the Plan.

As this is the only ancient city whose plan and buildings have been so fully exhibited in modern times, it appears to claim particular description.

Without the eastern wall of the city is an Amphitheatre of considerable size, in good preservation, which is not included in the present plan. It is common to enter the ruins on the southern side, at the marine gate, which opens into the court *O*. This is supposed, from the arms found in it, and the rude inscriptions on the walls, to have been the Military Quarters or Guard House. The first objects of interest are the two theatres, the comic theatre at *N*, and the tragic at *M*. The stage and the seats for spectators are still partially preserved.

From these theatres you pass to the Portico, as it is termed, at *G*, a square surrounded with a colonnade. It contains the foundation of a temple at *H*, probably of Hercules. Near this, the temple of Isis, *I*, still preserves a number of columns, with its shrine, its altars, the place where the ashes of sacrifices were deposited, and the fountain where the priests usually performed their ablutions. The temple of Esculapius, *K*, is less complete. At a little distance from these buildings, is the Forum, *F*, surrounded with temples and halls of justice. At *C* is the temple of Jupiter, and at *D*, that of Venus. In the latter, the columns of the portico, and the shrine with its beautiful mosaic pavement, are in good preservation. At *E* is the Basilica or judgment hall, surrounded with columns—the judgment seat at one end, with a dungeon beneath it, and the rostrum or pulpit for the orator on one side. Near it are several large buildings, probably designed for public offices; and in front, several pedestals for statues. The whole forum was undergoing repairs at the time of the eruption, and the work appears as if left at the moment. A column half finished, a capital whose ornaments just begin to project from the marble, a wall half laid, seem indications of the recent presence of the architects, and sad monuments of their sudden flight.

From this interesting spot you pass through several streets of dwellings, with shops of jewellers, apothecaries, surgeons, grocers, bakers, &c. indicated by the instruments or emblems of their business; and at the distance of three quarters of a mile from the marine gate, you pass out of the northern gate of the city. Here you enter the street of tombs, *B*, lined on each side with sepulchral monuments, some of considerable beauty.

The last object of interest, on this side of the city, is the house of Marcus Arrius Diomedes, or as some suppose, the villa of Cicero, *A*, a more extensive and elegant private dwelling, than any which has been discovered. It is of two stories, with a garden and fish pond on one side, and very extensive cellars around it. In the garden, two skeletons were found in the attitude of flight, one carrying a lamp and keys, the other following with a vase of jewels and coins. In the cellars a number of skeletons were discovered, whose forms had left a mould in the ashes around. Not more than ninety skeletons, in all, have been found in Pompeii, one of which was fastened in the stocks, in the military quarters.

When the student has learned and recited the above article in detail, let him answer the following questions.

Of which of the cities described was the circumference greatest? Mention the circumference of some of the others in the order of their size. Which cities had the greatest number of towers? Which city is most important from its connexion with sacred history? Which is supposed to have been the richest city in the world? Which was the capital of the greatest empire? Which the most distinguished for the elegant arts? Which for the strength of its walls and towers, and the labor bestowed on the works in and around it? Describe some of those works. Which cities present extensive ruins? In which two is the most distin-

guished ruin, the temple of the Sun? In what city are the ruins of a more gigantic structure than in any other? What is the size of the pillars and other objects found in these ruins? Describe the most distinguished among the ruins of Roman edifices—among those of Athens. From what ruins do we get some knowledge of the domestic arrangements of the ancients?

EXPLANATIONS OF THE MAPS.

*Difficulties occurring in the Study of Ancient Maps, stated and explained by Examples.**

1st. *The general appellation of countries frequently changed.*

EXAMPLES. As Syria repeatedly passed from one empire to another, the general appellation, which it had in common with other countries, would at one time be the Assyrian Empire, at another the Roman, &c.

The western parts of Asia Minor belonged at different times to all the great empires of the ancient world.

2d. *The particular names, by which countries are distinguished in History, have also undergone changes during the time taken in by the Ancient Maps.*

Persia, about three hundred years before the Christian era, changed its name for that of Parthia, which it retained for some centuries, and then changed again, and took its ancient appellation of Persia.

The southern part of the Grecian peninsula was called in very ancient times, Hellas, but it lost this name and took those of Peloponnesus and Græcia Propria.

When the Lydians are first mentioned in Ancient History, they are found inhabiting a small territory on the shores of the Ægean Sea, the name of which they had changed from Mæonia to Lydia. They were driven from this to the interior; and the country, which they left, again changed its name and was called Ionia, while they altered the name of the country to which they went, to Lydia. A part of what is now called France, before it had the name of Gaul, was called Celtica.

Some other changes of ancient names are the following:

Illyricum changed	to New Epirus.
Scotia to Ierne, then	to Hibernia.
Hesperia	to Italia.
Aran	to Syria.
Ionia, in Greece,	to Achaia.
Caria, in Asia Minor,	to Doris.
Magna Græcia	to Italia Propria.

* See Introduction.

Syria, in Asia Minor,	to Cappadocia.
Cilicia	to Mysia.
Daunia	to Apulia.
Isle of Phæacia	to Corcyra.
Isle of Samos	to Cephalenia.

3d. *Empires and Countries retaining the same name changed their boundaries, and at some period of time, contemplated by the ancient maps, were much larger than at others.*

B. C.

2300. THE BABYLONISH EMPIRE, founded by Nimrod, consisted of the cities of Erech, Accad, Calneh, and Babel. Some time after, it comprised all the country included within the southern bend of the Tigris and the Euphrates.

800. This empire included Chaldea, Mesopotamia, Assyria, and Media.

700. It took in all these countries except Media, with the addition of Armenia, Syria, and the Holy Land, except that part occupied by the tribes, of Benjamin and Judah.

THE LYDIAN EMPIRE at first consisted of a small tract of country in the west of Asia Minor, on the Ægæan Sea,

1100. since called Ionia. Being deprived of this, the Lydians removed into the interior and occupied a small territory, whose capital was Sardis.

562. Under Crœsus it included all Asia Minor between the Ægæan Sea and the river Halys.

THE MEDIAN EMPIRE under Dejoces included a small tract of country south of the Caspian Sea, of which Ecbatana was the capital. It was a part of the country now called Irak Ajami.

536. Under Cyrus it included Persia, Susiana, Babylonia, Chaldæa, Mesopotamia, Armenia, Bactriana, Syria, and the Grecian Empire in Asia. Cambyses enlarged it by the addition of Egypt.

THE GRECIAN EMPIRE comprised that part of Turkey south of lat. 37° and west of long. 37° from London.

333. In the time of Alexander, it extended over the whole of Greece, took in Thrace, Illyricum, Mœsia, the whole of the Persian Empire, a part of India and a part of what is now called Independent Tartary.

752. THE ROMAN EMPIRE at first consisted of Rome, then a small city. It extended gradually till it became the largest empire of the world.

The nations which compose this empire, and the order of time in which they were conquered, may be seen from the engraving prefixed to this work. The formation of the Roman Empire being illustrated by the river Amazon. The following questions are to be answered from it.

What nations were subdued by the Romans, during the fifth Epocha mentioned in the chronology, that is, from the founding of Rome, 753 B. C. to 356 B. C.? Mention them in the order of time in which they were conquered, which is the same order as the streams, by which they are set down, fall into the Amazon, going from the source towards its mouth.

What countries were subdued by the Romans during the sixth Epocha, that is, from 356 B. C. to the Christian era? Mention them as before, in the order of time in which they were subdued. What countries were subdued by the Romans from the Christian era to A. D. 107, at which time (Trajan being emperor) the Roman Empire was at its greatest extent? What were the two most important of these conquests? Which two of the branches of the Amazon are the most important as to the length and number of tributary streams? (The names of the countries set down on them constitute the answer as to these conquests.) What countries were included in the Carthaginian empire at the time of its junction with the Roman? What with Greece? Let the student find the names of the tributary streams, which fall into the Madeira and Negro, which rivers represent Carthage and Greece on the engraving.

4th. *Cities, rivers, &c. as well as Countries, changed their names, and at different periods of time contemplated by the ancient maps, were known by different appellations.*

EXAMPLES OF CITIES.

Tadamora	in Syria	to Palmyra.
Byzantium	in Thrace	to Constantinople.
Bagdat	in Assyria	to Ctesiphon.
Alexandria	in Hyrcania	to Antiochia.
Thebes	in Upper Egypt	to Diospolis Magna
Thinis	in Upper Egypt	to Ptolemais.
Calneah	in Assyria	to Ctesiphon.
Latopolis	in Lower Egypt	to Babylon.
Cyreschata	in Sogdiana	to Alexandria.
Is	in Mesopotamia	to Eiopolis.
Samaria	in Judea	to Sebaste.
Sichem	in Judea	to Neapolis.
Aco or Acon	in Syria	to Ptolemais.
Gordium	in Asia Minor	to Julianopolis.
Baalbek	in Syria	to Heliopolis.
Emmaus	in Judea	to Nicopolis.
Epidamnus	in Illyricum	to Dyrrachium.
Alexandria	in Susiana	to Antiochia.
Chorazin	in Judea	to Julius.
Jebus	in Judea	to Salem and from
Salem changed to Jerusalem or		Hierosolyma

Alexandria near the Euphrates below Babylon, under its Arabian princes was Hira, and in history is known by the general name of Alamundari.

5th. *Places are frequently known by different names at the same time.*

Jerusalem was called Hierosolyma and Cadytis.

Heroopolis in Lower Egypt was the Pithom of Scripture, the Patumus of Herodotus, and the Auris of Josephus.

Antiochia in Syria was also called Theopolis.

EXAMPLES OF RIVERS.

Vardanius or Hypanis of Asia.
Xanthus or Scamander.
Phasis or Araxes of Armenia.
Lycus or Zabus, Zabatus, or Zerbis of Assyria.

6th. *The same name is frequently applied to several different places.*

EXAMPLES OF COUNTRIES.

IONIA was a name given to the country which bordered on the Corinthian gulf, and also to a country of Asia Minor which lay on the Ægean sea.

HESPERIA is the ancient name of Spain and also of Italy.

DORIS was a northern state of Græcia Propria, and also a country in the southern part of Caria.

ARCADIA was a name given to Hepta-nomis, the central division of Egypt, and to the central state of Peloponnesus.

SCOTIA was an ancient name of Scotland and Ireland.

IBERIA was an ancient appellation of Spain, and of a country east of Colchis.

SINÆ, a country east of Serica and another of the same name east of India.

EXAMPLES OF CITIES.

Cities frequently received the names of their founder, or of their conqueror.

Alexander the Great was famous both for conquering cities and for founding them, and his whole route on his great expedition is left strewed with those of the name of Alexandria. It is said that he founded twenty, which were called Alexandria, besides a number whose names were changed to this after he conquered them The principal of these are enumerated below.

Antiochus and Seleucus were family names of the kings of Syria, and hence there are many cities in and about that country, which had the name of Antiochia, and Seleucia.

The following is a list of the names applied to a number of cities, with the countries in which they are found.

1st ALEXANDRIA in the western part of Troas, 2d on the Euphrates in Babylonia, 3d on the northern part of Syria Propria, 4th in the southern of Asia, 5th in the northern part of Hyrcania, 6th on the Oxus in Sogdiana, 7th on the Jaxartes, 8th in India on the head waters of the Indus, 9th near Candahar, 10th on the eastern bank of the Indus, 11th in the interior of Persia, which is supposed to have occupied the site of Venhend, 12th at the mouth of the Tigris in Susiana.

1st ANTIOCHIA in the northern part of Syria Propria, 2d in the northern part of Caria, 3d in the northern part of Pisidia, 4th in the southern part of Cilicia, 5th in the northern part of Bactriana, 6th on the Euphrates in Assyria, 7th on the Tigris in Susiana.

1st SELEUCIA in Syria Propria, 2d in the Holy Land, 3d in Pisidia, 4th in Silicia, 5th in Babylonia.

TROJA or TROY in Troas, and in Egypt.

AUGUSTA in Gaul, on the Sequana, 2d on the Garumna.

LATOPOLIS in Upper Egypt, and in Lower Egypt.

THEBES in Bœotia, in Upper Egypt and in Troas.

ATHENÆ or ATHENS in Attica and in Pontus.

Argos in Argolis and in Acarnania, both on rivers named Inachus.

PANORMUS in Epirus, Attica, Achaia, Mysia, Sicily, and Crete.

PELLA in Macedonia, Palestine.

LARISSA in Thessaly, Troas, Syria, Assyria.

LAODICÆA in the western part of Phrygia.

LAODICÆA COMBUSTA in the eastern part.

LAODICÆA LIBANI and Laodicæa in Phœnicia.

NICÆA in Gaul, Macedonia, Locris, Bythynia, India.

ORCHOMENE in Arcadia, Bœotia.

APAMEA in Babylonia, Syria, Phrygia.

HERACLEA SINTICA, in Macedonia.

HERACLEA in Gaul, Asia Minor, Italy, Thessaly.

EPIDAURUS in Illyricum, Argos, Lycaonia

EXAMPLES OF RIVERS.

INACHUS in ARGOLIS, Epirus.

PENEUS in Elis of Peloponnesus, Thessaly.

CEPHISSUS, two in Bœotia, one falls into Lake Copais, other into the Ægean Sea.

HEBRUS in Macedonia, Asia Minor

LYCUS in Pannonia, Assyria, Bithynia, Caria, Phrygia, Pontus, Armenia, Syria, European Sarmatia.
ACHERON in Epirus, Egypt, Lucania.
INDUS in India, Caria.

EXAMPLES OF MOUNTAINS.

OLYMPUS in Thessaly, Bithynia, Galatia, Cyprus.
IDA in Troas, Creta.

BARBAROUS NATIONS.

ABOUT the commencement of the Christian Era, a number of barbarous nations inhabited Europe. Some account of those tribes which were most restless, powerful, and warlike, is necessary to prepare us for the study of ancient history. The scholar might naturally be surprised, to find history describing these tribes in different places from those assigned them on his map. But he should be led to consider, that they were mostly in a wandering state, and that the place on the map where the name of the tribe is found, is frequently not the representation of their permanent residence, but sometimes of the situation in which they were first known, and sometimes merely that where they sojourned for a time.

Of the tribes which were unsettled and roving in their habits, those which figure most in ancient history, from being most powerful and warlike, were the GOTHS, HUNS, and VANDALS.

The GOTHS are said to have migrated from Scythia, to Scandinavia at an early period. Leaving this country, they established themselves in Sarmatia, on the southeastern shore of the Sinus Codanus. They then penetrated into the interior of the same country, where they divided into two tribes, the OSTROGOTHS and VISIGOTHS. Of these the Visigoths were the most powerful. The Visigoths overran Dacia, Thrace, Mœsia, Macedonia, Illyricum, Italy and the Roman provinces between Italy and the Danube, became masters of Rome, and settled in Gaul. When expelled from this country they went to Spain, where in the eighth century they were overthrown by the Moors, and were incorporated with that nation.

The HUNS, after leaving Scythia, deprived the Goths of their possessions in Sarmatia, traversed the northern part of Greece, established themselves in Germany, and overran the northern part of Gaul and Italy. Their empire in the eighth century

was destroyed by the Franks, and they mingled with the surrounding nations.

The VANDALS were originally from Scandinavia. They first settled in those parts of Sarmatia which lay on the southern shore of the Codanus. After they had made several encroachments on the Roman territories, they united with the Alans and Suevi, and leaving Germany they passed through Gaul together, but on entering Spain the Vandals separated from the Alans and Suevi, and settled for a time in the southern part of the country. They next invaded Africa, and proceeded through Mauritania, Numidia, and Africa Proper. From thence they crossed the Mediterranean, passed through Sicily, and besieged and took Rome. They then returned to Africa, where their kingdom in the sixth century was overturned by the Romans.

The three most warlike, powerful, and roving nations after these were the ALANS, HERULI, and GEPIDÆ. The Alans emigrated from Scythia. They crossed Sarmatia, allied themselves with the Vandals, and continued with that nation till the separation in Spain; after which they took possession of the south-western part of Lusitania. The Heruli and Gepidæ originally inhabited Scandinavia. The Heruli were first settled in Sarmatia, north of the Vandals, and afterwards near the Palus Mæotis. Again crossing the continent towards the west, they sought, as is supposed, a peaceful home in the Isles north of Scotland.

The Gepidæ, on leaving Scandinavia, their native land, established themselves on the Codanus, east of the Goths, and afterwards on the banks of the Tanais. Compelled to follow their conquerors, the Huns, they traversed Gaul, but regaining their freedom, they dwelt in Illyricum and Dacia. Here they remained till destroyed in the sixth century by the Lombards. The Suevi anciently inhabited Germany. After leaving the Vandals, they dwelt in the northern part of Lusitania, till overthrown in the sixth century by the Goths.

Other tribes still less roving in their disposition, although brave and powerful, were the LOMBARDS, BURGUNDIANS, FRANKS, and SAXONES. The origin of the Lombards may be traced to Scandinavia. They first settled in Germany, and afterwards erected their kingdom in the north of Italy. When, in the eighth century, it was destroyed by the Franks, it included all the country north of Beneventum. The Burgundians inhabited the banks of the Vistula near the Codanus. They migrated to Gaul, and founded a considerable kingdom, which in the sixth century was destroyed by the Franks. The

original seat of the Franks was between the Saa and Mulda, branches of the Elbe. They afterwards possessed the country which lay between the Visurgis and Rhenus; and erected a kingdom in Gaul by conquering and uniting with themselves many of the nations before noticed.

The SAXONES first inhabited Germany. At the time of their invading Britain, they possessed the northern circles of Germany, and most of the provinces of Holland.

There were other barbarous tribes inhabiting Germany: the Catti, Chauci, Cherusci, Quadi, Narisci, Frisii, Venedi, Vindili, Lygii, who were particularly distinguished for their gloomy and terrific appearance, and the Cimbri, who inhabited the country now called Denmark, which was called from them Cimbriæ. The Bastarnæ were in Tyras.

The four principal tribes of Britain were the Brigantes, Silures, Iceni, and Belgæ.

Several small tribes also inhabited Italy, the principal of which, were the Sabini, Fidennæ, Volsci, Rutuli, Vientes, and Veneti.

The SARACENS, who overran the northern part of Africa, were followers of Mahomet, who in the sixth century founded the sect called by his name.

The MOORS or MAURI were a party of Saracens who invaded Spain, and who were so called from their country Mauritania.

Some general remarks occur in reviewing this account of the ancient and barbarous tribes. Their progress, we perceive, has generally been from north to south. It was from Scythia, and Scandinavia (hence called the northern hive) that those swarms of barbarians issued which overran and finally subverted the Roman Empire.

If we contrast the situation of the moderns and ancients, we shall see the great advantages which we possess over them, in consequence of our superior geographical knowledge; and we shall perceive the aptness of that common metaphor, which represents knowledge as light, and ignorance as darkness.

This is illustrated by the situation of those inhabitants of the Roman Empire, who resided on its confines at the time when barbarous incursions were becoming frequent. They were ignorant of the figure and extent of the earth, and knew not what strange nations of human beings might inhabit it. Their poets and their popular mythology had filled their minds with vague and frightful notions of giants and monsters, and thus predisposed them to magnify every terrific appearance exhibited by

their barbarous invaders. Aware of this, these invading barbarians arrayed themselves with a design to cause terror by their appearance. Sometimes a tribe came down upon the Romans clad in the skins, and with the tusks and claws of savage beasts: some painted in a frightful manner their faces and bodies, and some came clothed in black. They mingled with all that was terrible to the eye, all that was appalling to the ear, rushing to battle with shrieks and yells. It is no wonder, that when thus fearfully attacked by beings as unknown and mysterious to them, as to us would be the inhabitants of another world, they became their easy prey.

The first settlers of America encountered foes who pursued, in regard to exciting terror, the same policy as did the ancient savages. With the superior knowledge which modern times afford, they succeeded in dispossessing the native barbarians of the land in which they were established; while, in ancient times, the inhabitants of the Roman Empire were by a similar enemy driven from their country, or subjugated with it.

OBSERVATIONS ON THE EARLY HISTORY OF MANKIND.

Designed to assist the Student in taking some General Views of the detached Facts, which constitute the Table of Chronology.

A Table of Chronology is an outline of the course of human affairs, and this course has been produced by the nature of man, his wants, his propensities, and his powers.

We find mankind, at the earliest periods of their history, to be a wandering race. They lived together in families or tribes, subsisting at first by hunting, afterwards by pasturage. When one of these bodies of men had settled down upon a hill or in a valley, they remained there as long as they found plenty of wild animals, or good pasturage for their flocks, unless driven away by some stronger tribe. But when game or pasturage began to fail, they removed to some place where they had a prospect of finding better; or if they received intelligence of some weaker tribe, who possessed flocks and herds, the wealth

of the times, sufficient to tempt them to undertake a conquest, they would attack, and, if successful, either drive them from the ground and occupy it themselves, or force them to remain as subjects.

Mankind at this period of society thought lightly of destroying each other. They were unenlightened by science, and unacquainted with that religion, which enjoins men to do unto others as they would that others should do unto them. Although regardless of the destruction of their fellow-men, they were attentive to their own preservation; and they early began to consult their safety by collecting in cities; particularly spots, about which they built immense walls, impenetrable to any assault from the rude weapons then in use.

We find that men, either as individuals or collective bodies, always act from the desire to better their condition, and to provide for themselves whatever comforts, or remove whatever inconveniences, the peculiar circumstances in which they are placed bring into their view. As their circumstances change, they feel new inconveniences, and perceive new objects of enjoyment brought within their reach; and hence are continually led from one improvement to another.

Thus as before stated, men collected in cities to obviate the inconvenience of being exposed without shelter to hostile attacks; and this caused a change in the state of society, which led them to invent and improve the arts.

While in a wandering state, they could not have convenient houses, and could possess but few utensils; for what they had, must be frequently removed. But as soon as they became settled, these comforts were placed within their reach, and their inventive powers were set at work to obtain them.

Man's first care is to provide for the wants of his body. Till that is done he has not leisure to pursue any other object. Hence savage tribes build their first habitations from no other motive than to shelter themselves from the inclemencies of the weather. Having done this, they find within themselves other principles of action. The love of beauty and order begins to unfold itself, and they are no longer satisfied unless the eye is pleased. Their invention is then further taxed to unite elegance with convenience in the construction of their houses, furniture, &c.

But if each individual had possessed a settled home, remote from all others, although he should have felt the desire to embellish it, he would not have been able; for being obliged to do

with his own hands every kind of labor necessary to his subsistence, he could not learn to perform any thing well. But when people were collected in cities, one man would be constantly employed in making houses, another in making furniture, &c. The carpenter would then build the house for the cabinet maker, while the cabinet maker made the furniture for him. Each being constantly occupied in his own trade, would become expert, and be constantly improving in the art which he practised. Thus the natural love of elegance, operating on men in situations where they had leisure to indulge it, and could make a division of labor, gave rise to the invention and improvement of the arts.

The introduction of the arts naturally led to commerce. Indeed they are connected with each other; for as soon as men began to follow distinct trades, each would make more of that sort of things which it was his business to make, than he wanted for his own use; and of course, he would wish to exchange it for what he wanted, of that which was produced by the labor of some other person.

From traffic arose the use of money, which, when once invented, stimulated to further improvement in the arts, and to enterprise in commerce.

The extension of tribes into Empires proceeded chiefly in one or more of the following ways. 1st, conquest; 2d, the protection afforded by cities to the surrounding country; 3d. confederation.

1st. Conquest. Suppose the time to have existed when mankind were collected only in small tribes. When two of these met in a hostile manner, the stronger would prevail and become increased by adding to itself the weaker. Thus strengthened it might easily overcome other tribes, as large as it was itself at the commencement of its career. But in the mean time other warlike tribes would also have been strengthened by the conquest and addition of smaller ones. In a contest between two thus increased, whichever prevailed, a junction would be formed, and thus an empire begin to exist.

The union of many small tribes to make one great nation, resembles the union of many small streams to make one great river. When one rivulet meets with another, the smaller is turned out of its course and becomes a part of the larger, which thus swelled easily turns into its current a third and a fourth. It then meets with streams formed like itself by a union of others. As they meet they unite, and thus acquire a strength

of current, which enables them to turn aside all others which would cross their passage. Thus the formation of the Roman Empire may be delineated in a manner sensible to the eye, by that of the river Amazon, one, the most important empire, and the other, the largest river of the world. (*See the engraving.*)

2d. Empires arose from the protection which cities afforded to the inhabitants of the surrounding country.

The walled cities afforded a place of refuge from the incursions of hostile tribes, not only to those who constantly dwelt within them, but to the neighboring inhabitants, who upon occasions of alarm, fled to them, and were with their flocks and herds received within the city.

When men are so weak as to need protection, they must expect to yield obedience to those from whom they receive it. They must in this case barter their liberty for their preservation; for mankind love power, and may be expected to exercise it where they can. The inhabitants of the city would not be at the pains to protect the people of the country, unless they would be submissive. Hence whoever was chief or king of a great city, governed the country around it, generally to an indefinite extent.

Empires which began in this way were generally increased by conquest, and those which arose chiefly from conquest were considered the more firmly established, the stronger they made their fortresses.

3d. Confederation. When a number of contiguous states found themselves in danger from some common enemy, they best consulted their safety by uniting for common defence. On this principle solely the first confederations appear to have been formed; but they have been found productive of so many advantages, that as mankind become more enlightened, confederacies are more frequent and better organized.

From this view of the early state of society we see that cities were comparatively more important to the ancient world than to the modern. That this is true, will appear in the comparison of ancient with modern chronology, from considering how much greater proportion of articles are contained in the former, which relate to their founding of cities, their conquest, and destruction. The walls of cities could not prove a defence against gunpowder, which was unknown to the ancients; but this is not the most important reason, why they are of less consequence now than formerly. Mankind have found that to respect the rights of others is the only way to secure their own;

and hence they have by degrees learned to frame wise systems of policy; so that they are now protected by public opinion, government and laws.

Remarks to Instructers, on teaching the Table of Chronology.

I have found that in giving pupils tables of chronology to learn, I imposed upon them an unpleasant, and a fruitless task; for they soon forgot the numbers which they had learned; I thus became satisfied, that in attempting too much I had failed of doing any thing effectually.

In order to obviate this difficulty, the subjoined table is designed to be taught in the following manner:

Let the dates of the epochas be perfectly committed to memory. They should be attended to at every recitation, while the pupil is learning the table. Let those circumstances of the events, which are printed in the larger type, be learned in the order of time. If the pupil is careful to notice how the events stand upon the page, he will be able to do this without difficulty. Next let the events of the table be committed entire; and answers to the geographical questions learned from the maps. Then from the dates of each epocha, let three or four be selected and committed to memory. It is not so important what dates are learned, as it is to have a few fixed in the mind as points from which to reckon others. Let the pupils therefore take their choice. In selecting, they will be induced to examine them all, although they will probably fix where there is some peculiarity of numbers, such as several of the same kind standing together. Some of these peculiar dates are purposely introduced into the table.

Some time is requisite to learn the table well. The sum of improvement cannot always be estimated by the number of pages gone over.

The instructer would find it profitable to ask his pupils frequently, in the course of their recitations, at about what time events happened, which are mentioned in the table, but whose dates they have not learned. If they have attentively gone through the study as directed, they will have acquired that general knowledge, which will enable them to answer such questions with sufficient correctness.

CHRONOLOGY

CONNECTED WITH GEOGRAPHY.

Division of Ancient Chronology into Epochas, according to Lavoisne.

FIRST EPOCHA.

From the Creation of the World, B. C. 4004, to the calling of Abraham, B. C. 1921.

SECOND EPOCHA.

From the calling of Abraham, to the Institution of the Passover, B. C. 1491 Date of the First Map.

[See Directions, &c. at the close of the Work.]

THIRD EPOCHA.

From the Institution of the Passover, to the Death of Solomon, B. C. 980. Date of the Second Map.

FOURTH EPOCHA.

From the Death of Solomon, to the Foundation of Rome, B. C. 752. Date of the Third Map.

FIFTH EPOCHA.

From the Foundation of Rome, to the Birth of Alexander the Great, B. C. 356. Date of the Fourth Map.

SIXTH EPOCHA.

From the Birth of Alexander the Great to the Nativity of Jesus Christ. Date of the Fifth Map.

TABLE OF CHRONOLOGY.

B. C.

4004. The Creation of the World.

2348. The Universal Deluge; after which Noah's Ark rested on the Mountain Arrarat. *a*

2222. Ninus, King of Assyria, began to reign. *b*

2217. Babylon and Nineveh built.
Babylon, by Nimrod, who founded the Babylonish Monarchy; Nineveh, by Assur, who founded the Assyrian Monarchy. *c*

2189. Sicyon founded. *d*

2188. Monarchy of Egypt, founded by Menes. *e*

1921. The Calling of Abraham.
Abraham was called in the Land of Haran. *f*

1856. Kingdom of Argos, founded by Inachus. *g*

1556. Kingdom of Athens, founded by Cecrops, at the head of an Egyptian Colony. *h*

1546. Troy, founded by Scamander. *i*

1522. Amphictyonic Council instituted.
It derived its name from its founder, Amphictyon; its meetings were held at Thermopylæ. *j*

1520. Corinth built. *k*

1519. Thebes built by Cadmus, a Phœnician, who also introduces Letters into Greece. *l*

---

a Where was mount Arrarat? *b* Where was Assyria? *c* Babylon? Nineveh? *d* Sicyon? *e* Egypt? *f* The Land of Haran? *g* Where was Argos? *h* In what direction was Athens from Egypt? What sea must Cecrops have crossed? *i* Where was Troy? *j* Thermopylæ? *k* Corinth? *l* What Sea must Cadmus have crossed from Phœnicia to Thebes?

1491. Institution of the Passover.
The Passover was instituted when the children of Israel, led by Moses, left Egypt for the land of Canaan. *m*

1453. The Olympic Games instituted.
These games were celebrated at Olympia and consisted principally of athletic exercises. *n*

1406. Minos reigns in Crete, and gives laws to the Cretans. *o*

1263. The Argonautic Expedition.
This expedition was from Thebes to Colchis; and was undertaken by Jason, to avenge the death of a kinsman, and recover treasures seized by the government of Colchis; these treasures were spoken of as the "golden fleece." *p*

1252. Tyre built by the Sidonians. *q*

1202. Salamis built by Teucer. *r*

Celebrated Expedition of the Greeks against Troy.
The Grecian fleet sailed from Ephetæ; the Greeks destroyed Troy after a siege of ten years. *s*

1055. David, King of Judæa. *t*

1004. The Temple Dedicated, which was built by King Solomon at Jerusalem. *u*

980. The Death of Solomon.

886. Homer's Poems brought from Asia to Greece.
Several places claim the honour of giving birth to this Poet; among which are Smyrna, and the island of Scio. *v*

884. Republic of Sparta, reformed by Lycurgus. *w*

869. Carthage founded by Dido, who fled from Tyre. *x*

820. Nineveh taken by Arbaces, governor of Media. *y*

769. Syracuse built by Archias of Corinth. *z*

752. Rome founded by Romulus. *a*

721. Samaria taken by Salmanezer, which ends the Israelitish Kingdom. *b*

658. Byzantium founded by Pausanias of Sparta. *c*

606. Jerusalem taken by Nebuchadnezzar, King of Babylon. *d*

601. Nebuchadnezzar, takes Nineveh, and ends the Assyrian Empire. *e*

562. Crœsus reigns in Lydia. *f*

538. Babylon taken by Cyrus at the head of the Persians, which ends the Jewish Captivity, after it had lasted 70 years. *g*

---

m Where was Canaan? In what direction was Egypt from Canaan? *n* Where was Olympia? *o* Crete? *p* Colchis? What sea must the Argonauts have crossed from Thebes to Colchis? *q* Where was Tyre? *r* Salamis? *s* Ephetæ? What sea must the Grecians have passed to go to Troy? *t* How was Judea situated? *u* Of what country was Jerusalem the Capital? *v* Where was Smyrna? Scio? *w* What was the situation of Sparta? *x* Where was Carthage? What must have been the route of Dido? *y* Where was Media? *z* What Sea between Syracuse and Corinth? *a* Where was Rome situated? *b* Samaria? *c* How were Byzantium and Sparta situated with regard to each other? *d* In what direction was Jerusalem from Babylon? *e* Nineveh? *f* Where was Lydia? *g* In what direction is Babylon from Persia?

504. Sardis taken and burnt by the Athenians.

490. War between the Greeks and Persians.

The principal battles were fought—At Marathon where the GREEKS under MILTIADES are victorious over the PERSIANS under DATIS, and ARTAPHERNES. At Thermopylæ, where the Persian army under XERXES, amounting to 5,000,000, is held in check for three days by three hundred Lacedemonians, who with their commander Leonidas voluntarily devoted themselves to death. Near Salamis is a naval engagement, owing to the policy of Themistocles, the GREEKS defeat the PERSIANS. At Platea the GRECIANS under ARISTIDES and PAUSANIAS defeat the remainder of the Persian army under Mardonius. Near Mycale, on the same day, the Grecians defeat the remainder of the Persian fleet. At the mouth of the Eurymedon, the Greeks under Cimon are victorious over a Persian fleet, and under the same commander defeat an army under Megabyzes. *i*

451. Capua founded by the Tuscans. *j*

444. Law at Rome for the intermarriage of the Patricians and Plebians.

431. The Peloponnesian war begins. *k*

414. Lysander destroys the Athenian fleet at Ægos Potamos, which puts an end to the Peloponnessian war.

401. Retreat of the ten thousand Greeks under Xenophon from Babylon to the Euxine. *l*

391. Veii taken by Camillus at the head of the Romans. *m*

382. War between the Thebans and Spartans begins

The principal battles are at Leuctra and Mantinea, in which the Thebans under Epaminondas are victorious over the Lacedemonians. *n* At Mantinea, Epaminondas is mortally wounded.

356. Alexander born at Pella. *o*

343. War between the Romans and Samnites, which led to the conquest of Italy. *p*

338. Battle of Cheronæa, gained by Philip of Macedon over the Thebans and Athenians.

336. Thebes destroyed by Alexander the Great.

333. Alexander's expedition against the Persians.

Alexander defeats Darius Codomanus, king of Persia, at Granicus and Issus; he takes the cities of Tyre and Gaza, visits the Temple of Jupiter Ammon in Lybia, defeats Darius at Arbela, takes possession of Susa, and burns the Palace of Persepolis. *q*

324. Alexander dies at Babylon.

His empire is dismembered and divided between four of his generals. *r*

---

h Where is Sardis? *i* Marathon? Platea? Mycale? What was the course of the river Eurymedon? *j* Where was Capua? *k* Where were the Peloponnesian States? Where is Ægos Potamos and Sestos, which are contiguous? *l* Through what countries must Xenophon have conducted his army? *m* Where was Veii? *n* Where was Leuctra? Mantinea? *o* Where was Pella? *p* Where was Samnium? *q* Where was the Granicus? Issus? Gaza? Lybia? How were Tyre and Egypt situated in regard to each other? Where was Arbela? Susa? Persepolis? *r* In what direction was Babylon from Persepolis?

302. Demetrius Poliorcetes takes Athens.

300. Antioch, Edessa, and Laodicea founded by Seleucus. *s*

280. Pyrrhus, king of Epirus invades Italy,

in aid of the Samnites. Six years after Pyrrhus is totally defeated by the Romans near Beneventum. Soon after, the Samnites submit to the Romans. *t*

264. The first Punic war begins.

The siege of Lilybæum ends this war, after it had continued twenty-three years. *u*

219. Saguntum is taken by Hannibal, the Carthaginian general, which opens the second Punic war.

Hannibal defeats Scipio and Sempronius, the Roman commanders, near the Rhone, the Po, and the Trebia; then invades Etruria;—about this time encounters the two consuls Terentius and Emilius at Cannæ, where the Romans meet with a great defeat. Hannibal is overcome at Zama by Scipio, which ends the war. *v*

173. War between Perseus king of Macedon, and the Romans.

After six years, Perseus is defeated by Paulus Æmilius, which ends the kingdom of Macedon. *w*

149. Third Punic war.

After three years it terminates in the destruction of Carthage. The same year Corinth is taken. *x*

133. Numantia taken. Pergamus added to the Roman empire. *y*

111. Jugurthine war.

Jugurtha seizes upon the kingdom of Numidia, in opposition to the rights of Adherbal, who flees to the Romans for assistance. The Romans, under this pretence, make themselves masters of the country. *z*

80. Julius Cæsar distinguishes himself;

He forms with Crassus and Pompey the first Triumvirate. In the first year of his reign he subdues the Helvetii, who invaded the Roman provinces, and also the Germans, who attempted a similar invasion. *a*

55. Cæsar lands in Britain; subdues a part of the island. *b*

53. Crassus is killed in Mesopotamia.

The war begins between Cæsar and Pompey. Cæsar, at the head of a numerous army, marches to Rome. *c*

48. Cæsar gives battle to Pompey in Pharsalia.

He defeats him entirely; and Pompey flees to Egypt, where he is slain. *d*

44. Julius Cæsar assassinated in the Senate-house.

---

s How was Antioch situated? Edessa? Laodicea? *t* What sea must Pyrrhus have crossed from Epirus to Italy? Where was Beneventum? *u* Lilybæum? *v* Saguntum? What was the course of the Rhone? The Po? The Trebia? What mountains did Hannibal pass from the River Trebia to Etruria? Where is Zama? *w* Where was Macedon? *x* How were Corinth and Carthage situated with respect to each other? *y* Where was Numantia? Pergamus? *z* Numidia? What countries must the Romans have passed through from Rome to Numidia? *a* What mountains must the Helvetii have crossed to invade Rome? What country between Germany and Italy? *b* What separated Gaul and Britain? *c* What River must Cæsar have passed from Cisalpine Gaul to Italy? *d* Where was Pharsalia? What sea must Pompey have passed to Egypt?

Two years after follows the battle of Philippi, in which Brutus and Cassius are defeated. *e*

33. Mauritania is reduced to a Roman province. *f*

31. Naval battle, fought near Actium, ends the Roman commonwealth. Octavius declared sole sovereign. *g*

30. Alexandria taken by Octavius, who receives the title of Augustus. *h*

JESUS CHRIST born at Bethlehem, four years before the commencement of the present or vulgar era.

MYTHOLOGY,

CONNECTED WITH ANCIENT HISTORY.

SATURN, the most ancient king of Creta, was regarded by the Greeks and Romans as the oldest of the gods. He was dethroned by his son Jupiter, and wandered into Italy, whence that country was sometimes called Saturnia. The part of it which he settled was Latium. He civilized the inhabitants, improved the laws, and cultivated the country to such a degree, that his reign was called the golden age. At Rome he was honored by a festival called Saturnalia, during which the Romans gave liberty to their slaves.

JUPITER. Although the poets sometimes speak of Jupiter as king of Creta, yet he is usually represented as the father and king of gods and men. In his childhood, his father Saturn, alarmed by an oracle, which foretold that his son would dethrone him, sought his life. He was concealed in the woods of Mount Ida, by the nymph Amalthea, who had a beautiful goat, which having lost a horn, Jupiter made it the *Horn of Plenty*. He was worshipped at Lybia, under the name of Ammon or Hammon, in a temple built on one of the oases of the desert. He is said to be the same deity whom the Babylonians worshipped under the name of Belus. He was called Jupiter Capitolinus, from the first temple built at Rome, which stood upon the Capitoline Hill, and was dedicated to him; Jupiter

e Where is Philippi? *f* Mauritania? *g* Actium? *h* What sea must Octavius have crossed to Alexandria?

Where is Crete? In what direction is Italy from Crete? In what part of Crete is Mount Ida? From what circumstance shall you remember this mountain? At what places was Jupiter worshipped? Describe their situations. What is remarked concerning the god Belus?

Dodonæus, from the city of Dodona in Chaonia, near which was a grove of oaks sacred to him. Here was the most ancient oracle of Greece. Some say that the leaves of the oaks became vocal and uttered responses to those who came to ask for the secrets of futurity. There was a famous statue of Jupiter at Præneste. His residence was said by the poets to be in heaven or on the top of Mount Olympus. He was worshipped in the city of Olympus, and had there a splendid temple. On the plain of Olympus solemn games called the Olympic games were celebrated to his honor once in five years.

Juno, the wife of Jupiter, was worshipped chiefly in the island of Samos and at Carthage.

Vesta, the virgin goddess of fire, was worshipped first at Troy and afterwards at Rome. The priestesses were called vestals.

Ceres, the goddess of corn. Her daughter Proserpine was gathering flowers in the plains of Enna in Sicily, where Pluto, the god of the infernal regions, seized her and forced her to become his wife. The mother, with her torch lighted in the flames of Ætna, wandered over the earth in search of the daughter. Among other places, she came to Eleusis, where she restored Triptolemus, the king of Eleusis, to health, and taught him husbandry. Triptolemus instituted certain mysteries in honor of his patroness, which were called the sacred rites of Ceres or the Eleusinian mysteries. She was also worshipped in Sicily.

Minerva or Pallas was the goddess of wisdom and of war, and the inventress of spinning and weaving. The Athenians worshipped her as their tutelar deity. The Trojans had an image of Minerva called the *Palladium*, which, they believed, ensured the safety of the city.

Mars, the god of war, was worshipped at Rome, and at Thrace, where he was supposed to reside.

Venus, the goddess of love and beauty, was worshipped at Paphos, Amathus, and Idalia in Cyprus, at Eryx in Sicily, and

---

In what part of Chaonia was Dodona, and for what was it distinguished? Where were the mountain, city, and plain of Olympus, and for what were they distinguished? At what places was Juno worshipped? Describe their situations. In what part of the island of Sicily was the plain of Enna? Where is Eleusis, for what distinguished, and in what direction from Sicily? What remarkable image of Minerva is mentioned? In what part of Greece is Thrace? In what parts of the island of Cyprus are Amathus, Paphos, and Idalia? In what part of Sicily is Eryx?

at Cnidus in Caria. She was called Cytheræa, because as some said, she sprung from the foam of the sea near the Island Cythera. She is attended by CUPID the god of love, and the *three Graces*.

VULCAN, being cast out of heaven, fell into the Island of Lemnos, where he became the inventor of the forge. His workshop was in a cave under Mount Ætna, and his workmen were the *Cyclops*, monstrous giants, who had but one eye in the middle of the forehead.

APOLLO was worshipped as the god of poetry, music, medicine, augury, and archery. He was born in the Island of Delos, and was supposed to reside there during the six summer months, but in the winter at Patara, in Lycia. In his youth he slew the serpent Python, and hence was called *Pythius*, and his priestess, *Pythia*. Apollo had oracles at Claros near Colophon, at Patara, and in Tenedos; but his chief oracle was at Delphos.

We commonly find joined with Apollo, the *Nine Muses*, who presided over the liberal arts. The *Muses* received different appellations from their favorite haunts, the principal of which were mount Pierius, their birthplace, mount Cithæron, where they dwelt, and mount Parnassus, where were two summits, on which, if any one slept, he immediately became a poet.

DIANA, the goddess of woods, and hunting, had a splendid temple at Ephesus. She had one in the Chersonesus Taurica, where human beings were offered on her altar.

MERCURY was born at Cyllene. He was the messenger of the gods, the patron of eloquence, the protector of merchants, the conductor of ghosts to their proper mansions, and the god of ingenuity and theft. Images of Mercury, that is, shapeless posts with marble heads, used to be placed where several roads met, to point out the way.

PAN, the god of shepherds, was worshipped in Arcadia; with him were the Rural Demigods, the *Satyrs*, a race part goat, part human.

BACCHUS, the god of wine, was worshipped in many parts of Greece and Italy.

In what part of Caria is Cnidus? Where is Cythera? Where is Lemnos? Delos? Patara? Claros? Delphos? For what is Delphos distinguished? What were the favorite haunts of the Muses? Describe the situation of each. Describe the places where Diana was worshipped. Where is Cyllene? For what was Arcadia distinguished?

NEPTUNE, the god of the sea, had a temple at Ægæ, a town in Eubœa. The *Isthmian games*, celebrated on the isthmus of Corinth, were in honor of Neptune. He is said to have built the walls of Troy.

PLUTO or DIS was the god of the infernal regions, and of every thing beneath the surface of the earth. Hither, according to classic mythology, the souls of the dead were conveyed by the god Mercury, and carried over the river Styx by Charon, the ferryman of the nether world. At the entrance of these regions was placed the three-headed dog Cerberus. They were divided into two departments. On the left was Tartarus, where the souls of the wicked were tormented. On the right were the Elysian Fields, where the spirits of the just enjoyed perpetual happiness. In these regions Pluto was seated on his throne, with his consort, the goddess Proserpine, at his side. Here were the three Furies, whose hair was interwoven with snakes, and the Fates, who determined the life of man by spinning; one held the distaff, another spun, and the third, Atropos, cut the thread. The four infernal rivers were Acheron, Phlegethon, Cocytus, and Lethe, the river of oblivion. The passage to the infernal abodes was fabled to be the cavern of Avernus.

OSIRIS, APIS, or SERAPIS, was the son of Niobe and Jupiter. He sailed from Greece to Egypt, where he overcame the Egyptians, not so much by arms as by courtesies and favors. They believed that when Osiris died, his soul went into an ox, and therefore worshipped him in that form.

HERCULES, the principal of the *Heroes* or *Demigods*, was the son of Jupiter and Alcmena. He was subject to Eurystheus, and employed by him in performing those actions, which were called his twelve labors.

1st, In the Nemean woods, he destroyed a terrible lion; 2d, on the lake Lerna, a water serpent or dragon, called the Hydra; 3d, the wild boar, in the wood of Erymanthus; 4th, the brazen footed stag, on mount Mænalus; 5th, the Stymphalides, monstrous birds who fed on human flesh at the lake Stymphalus; 6th, he cleansed the stables of the king of Elis in one day, by turning the course of the river Alpheus, and making it run

---

For what was the isthmus of Corinth noted? In what part of Eubœa is Ægæ? In what part of Greece are the fabled rivers of Hell? Where is the cavern of Avernus? What direction from Greece to Egypt? What places are distinguished for being the scene of the twelve labors of Hercules? Where is the Nemean Forest? The lake of Lerna? The wood of Erymanthus? Mount Mænalus? Lake Stymphalus? The Alpheus?

through them; 7th, he brought alive to Mycenæ a wild bull which had ravaged Crete; 8th, he slew Diomedes, king of Thrace, and his four mares, which he fed on human flesh; 9th, he slew Geryon, the three-bodied king of Gades, and carried away his cattle; 10th, he conquered the Amazons at the river Thermodon; 11th, in Africa, he killed the Dragon, that guarded the golden apples in the garden of the Hesperides; 12th, he dragged the three-headed dog Cerberus from Hell.

Theseus slew the terrible Minotaur, a monster kept at Crete, who devoured a certain number of human victims every year. He succeeded in killing it by means of Ariadne, daughter of Minos, the king of the island, who with her sister Phædra, followed him on his return. Theseus, it is said, preferring Phædra, left Ariadne upon the island of Naxos.

Jason was the leader of the Argonautic expedition. The wonderful ram, whose fleece they sailed to obtain, was once carrying through the air Helle, the daughter of the king of Thebes, when she fell and was drowned in the strait, called afterwards from her name Helles-pontus. The Argonauts stopped in their way, at Lemnos. On their arrival at Colchis, Jason inspired with a passion Medea, daughter of the king, and by her magic powers, was enabled to bring away the Golden Fleece. On his return to Greece, he married her, and lived happily with her at Corinth for ten years, when he deserted her for a later favorite. The enraged Medea slew in his presence her own children, of which he was the father, then set fire to the palace, and burnt to death her husband and her rival. After this she went to Athens, where she married again, and had a son, Medus, who accompanying her to Colchis, became the sovereign of the country, which he called from his own name Media.

The most celebrated of the *Grecian Leaders* in the *Trojan* war, were *Agamemnon*, from Argos, *Menelaus*, from Sparta, *Achilles*, from Larissa, in Thrace, *Ulysses*, from the island of Ithica, *Diomedes*, from Ætolia, *Nestor*, from Pylos, *Idomeneus*, from Crete, *Ajax Telemon*, from the island of Salamis, and *Ajax Oileus*, from Locris.

Where is Gades? The Thermodon? The island of Naxos? From what circumstance can you remember the ancient name of the Dardanelles? Where is Corinth? From whom is it supposed that Media received its name? Give the names of the most renowned leaders of the Greeks in the Trojan war, with the places from which they went? Describe the situation of the places.

The *Seven Wonders* of the world were—1st, the Colossus of Rhodes, 105 feet high; 2d, the tomb of Mausolus, king of Caria; 3d, the Pyramids of Egypt; 4th, the Temple of Diana, at Ephesus; 5th, the Statue of Jupiter Olympus, at Athens, 75 feet high, sculptured by Phidias in gold and ivory; 6th, the Walls of Babylon and the Hanging Gardens; 7th, the Labyrinth of Egypt.

CHANGES IN NATURAL GEOGRAPHY.*

The rule heretofore stated, that the works of nature are permanent, would mislead us, unless taken with its exceptions. The traveller, as he looks around and inquires whether the objects which he views are the same which were beheld by the men of ancient days, should have some data given him, by means of which his inquires may be answered.

By knowing the causes which have operated to produce alterations, we can reason respecting any particular spot whose history is not known; whether or not it is from its situation, subjected to the agents of decay and change; and by history, we find accounts of the natural changes which have been thought worthy of recording.

The changes in natural geography have arisen from different causes, and are accordingly of different characters. Some have been instantaneous, others slow and imperceptible. The known powers and agents which have contributed to effect these changes, are principally three, *Air, Fire, and Water.*

Fire exhibits evidence by volcanoes and earthquakes, that however generated, it is constantly at work in the bowels of the earth; and history and natural appearances establish the fact, that its action has been experienced through every period of time. But though its action has been constant, the places where its greatest force has been exerted have been variable.

Ætna, it is believed, was not a volcano in the time of Homer. It began to burn about 3000 years ago. It is surround-

---

What were the seven wonders of the world? Describe the places which contained them.

* Since the first edition of this work, Malte Brun's Geography has appeared, and by means of it this article is enlarged and improved.

ed by extinguished volcanoes, which appear much more ancient.

Vesuvius is not mentioned by the early Roman writers as a volcano, but its extraordinary beauty and fertility are celebrated. There were, however, appearances near the summit which led to a belief of its former volcanic state, and the adjacent cities were paved with the lava supposed to have been thrown from it by previous eruptions. The first eruption on record took place on the 24th of August, A. D. 79, and was the same which overwhelmed, in its terrific and desolating progress, the towns of Herculaneum, Pompeii, and the Scabiæ.

Since the dates mentioned, the eruptions of Ætna and Vesuvius have been numerous, and such quantities of stones, lava, &c. thrown from them, that the coast in their neighborhood has, in consequence, been greatly altered. Harbors have been filled up, and new promontories, and even mountains, have been formed.

The Lipari islands are supposed to owe their origin to the volcanoes which they contain. Strongyle, now Stromboli, is not known to have existed as a volcano earlier than B. C. 290.

Many volcanoes have burst out in modern times; many that were anciently burning are extinguished. Of the latter, besides those mentioned in the vicinity of Ætna and Vesuvius, many have been discovered in almost every country. They are found in Italy, France, Germany, and Britain.

The internal fires, operating with other causes, produce tremendous shakings and agitations of the earth, and sometimes change, in this manner, its external appearance. By earthquakes, islands are sometimes thrown up from the bottom of the sea; land sinks, and waters rising, form lakes; springs are stopped, rivers disappear, and sometimes mountains fall.

Strabo speaks of a piece of ground being suddenly raised up near Methone, in Greece, to the height of seven stadia, which is more than 2200 feet. We are informed that a volcano of considerable elevation, in the island of Timor, in the Indian sea, sunk suddenly down, leaving in its place nothing but a muddy marsh.

The absence of heat, as well as its superabundance, has produced changes in the surface of the earth. In Norway, as we are told, the mountains are sometimes cleft by frost, and the valleys are suddenly overwhelmed by avalanches of stone.

The Air is also an agent in producing changes. It possesses a dissolving power, which ultimately decomposes the

most solid substances. The rock cleaves and separates into stones, the stones crumble into gravel, or dissolve into sands. They are carried by the winds and the waters far from their original places, and thus new soils are formed. Sometimes moving bodies of sand have changed the face of countries.

The sands of the desert were formerly remote from Egypt. They have now been driven by the west winds within its boundaries, and have reduced much fertile country to a desert. They have accumulated to such a depth as to bury villages and cities beneath them. Similar encroachments are supposed to have taken place in the countries bordering on the Euphrates.

WATER is, however, the most powerful of all the agents of nature in changing the face of the globe. Sometimes the waters of a rapid river, an agitated lake, or even of a subterraneous current, waste, consume, or secretly undermine a mass of rocks or of solid earth. The beds of sand, gravel, clay, or chalk, which serve as a support, are dissolved or swept away, an excavation is formed, and the superincumbent mass sinks down by its own weight.

Currents of water produce changes in the adjacent country. Rivers sometimes change their course; sands are carried down by their currents, and deposited about their mouths, and thus lands are formed, and harbors often filled up.

The whole waters of the Po flowed south of Ferrara, a number of miles from its present channel, as late as the 12th century. The coast around the mouths of the Po and Arno has advanced greatly into the sea since the period of ancient history. In Egypt, the coast of the Delta, in the time of Herodotus, extended in a straight line; now, the depositions of the Nile have formed an extensive semi-circular projection into the sea.

The motion of the waters of the sea has an effect to change the form of its coast. The experience of more than twenty centuries proves that the present sea, as to its entire quantity of water, is in a state completely stationary; but temporary or local causes may produce small oscillations, which cause on the one hand little subsiding of the sea, and consequently the formation of new land; and on the other, little invasions of the sea upon the earth. These changes mutually compensate each other, and have little effect on the form of great continents.

On the shores of the Mediterranean, a number of changes are discernible. The port of Alexandria, in Egypt, is dammed up. The town of Damietta, whose walls were formerly washed by the

sea, is now at a considerable distance from it. The lake Mengalah appears to be formed either by the overflowing of the Nile, or an eruption of the sea. The island of Tyre has been united to the continent. At the mouth of the river Pyramus, in Cilicia, a deposite of sand has extended the modern coast to six miles beyond the ancient. The Meander has by little and little filled up the valley into which it flows, and which was formerly a gulf. The inhabitants of Ephesus and Miletus have several times changed the situation of their towns by following the sea, which retired from their walls.

In the gulf of Venice, very remarkable changes have taken place. Some authors suppose that Lombardy has been, in a great measure, formed by the combined deposites of the Po and of the sea. The Po, in former times, frequently inundated whole provinces. By erecting dykes, and frequently renewing them, the bed of this river has now become elevated several feet above the lands which surround it. The grounds near Ravenna have sunk, so that the pavement of the Cathedral is only six inches above the level of high water; but they have also extended, so that this town, which was formerly situated in the midst of marshes and canals, and was furnished with an excellent port, is now three miles from the sea. Aquileia, in like manner, stands at a greater distance from the sea than formerly.

At the mouth of the Tiber, land is found which did not exist in the time of the ancient Romans. The Pontine Marshes now cover a part of the Appian way.

Upon the coast of France, the Mediterranean has receded. Aigues Mortes in Languedoc, was formerly close to the sea, but at present is two leagues distant. It is probable, that the islands of Goza and Cumano were formerly united to Malta.

The islands of Scilly, near England, were formerly inhabited and carried on considerable commerce with the Phenicians; but they are now little more than barren rocks.

The Atlantic Ocean has made some additions to the land on the coast of France. Several bays have been filled up, and the Adour has been obliged to seek a new opening into the sea.

On the coast of Holland, several great tides have been the periods of dreadful disasters, and have caused important changes.

The Zuyder-Zee was anciently nothing but a lake of trifling extent, which flowed into the sea by the river of Ullie, called by Tacitus, Flevum, and considered as a branch of the Rhine

About the year 1250, the sea made an irruption into it. Vast tracts of land, which running waters had undermined, gave way, and thus the Zuyder-Zee was formed. The gulf of Dollart, between West Friesland and the province of Groningen, was, in 1300, a fertile canton, covered with delightful meadows. In 1421, the united force of the sea and rivers destroyed, near Dort, 72 villages, whose number of inhabitants was thought to be 100,000. Over their ruined habitations, now flows the lake of Biesbosch.

On the Danish coast of Sleswick, the sea has both lost and gained. The island of Nordstrand was swallowed up in 1634.

Other causes besides Fire, Air and Water, have in a measure contributed to change the face of external nature. In some instances, such apparently insignificant beings as the coral polypii have filled up harbors, and rendered the navigation of seas dangerous. This is particularly the case with the Red Sea.

The industry of man, by spreading manure over the fields, by erecting dykes along the sides of rivers, tends insensibly to elevate the soil of a country.

SKETCHES OF SACRED HISTORY, CONNECTED WITH GEOGRAPHY.

VIEW OF THE JOURNEYS OF OUR SAVIOUR.

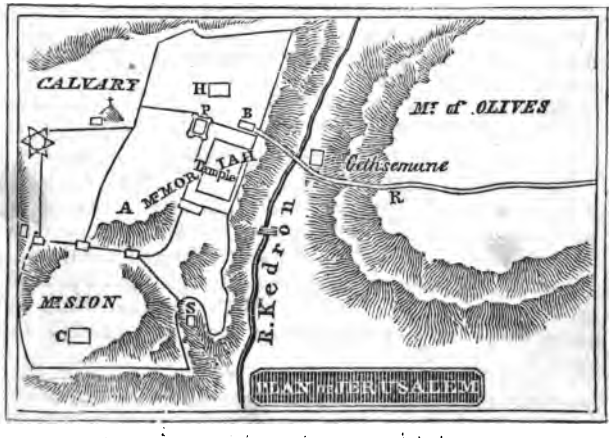
Our Lord Jesus Christ was born at Bethlehem. On account of Herod's persecution, he was thence conveyed by his parents to Egypt. After Herod's death he was brought back to Nazareth, and dwelt with his parents until the commencement of his ministry. The only journey recorded is his visit to Jerusalem, at the passover with his parents, at twelve years of age.

A. D. 28. IN THE FIRST YEAR OF HIS MINISTRY Jesus went from *Nazareth* to the *River Jordan*, where he was baptized by John. Thence to the *Desert of Judea*, where he fasted forty days, and then to Bethany beyond Jordan or *Bethabara*, where John was.

From this place he went to *Cana*, where he wrought his first miracle, to *Capernaum*, *Jerusalem*, and the country of *Judea*

Sychar, and *Cana*, and back to Jerusalem. To avoid the persecution of the Jews, he went to *Galilee*, and remained some time and after visiting *Jerusalem* at the feast, returned, and commenced his public ministry in *Galilee*. He then travelled through *Nazareth*, *Capernaum*, and other parts of *Galilee* to *Nain*, the *Lake* or *Sea of Galilee*, where he stilled the storm, the country of *Gadara*, *Capernaum*, and through *Galilee*, where he sent out the twelve Apostles. During their absence, he journeyed from *Capernaum*, through *Bethsaida*, to *Samaria*, *Bethany* near *Jerusalem*, to *Jerusalem*, *Bethabara*, and again to *Bethany*, where he restored Lazarus to life, A. D. 29. Thence he went near *Ephraim*, back to *Capernaum*, the *Sea of Galilee*, the *interior of Galilee*, and *Nazareth*, where the apostles returned to him.

A. D. 29. In the second year of his ministry, Jesus went with the twelve to a desert place near *Bethsaida*, east of *Jordan*, where he fed the 5000 with five loaves and two fishes. Thence he went through the land of *Gennesareth* to *Capernaum*, to the neighborhood of *Tyre* and *Sidon*, through *Decapolis*, along the *Sea of Galilee* to the neighborhood of *Magdala* and *Dalmanutha* to *Bethsaida* in *Galilee*, and *Cæsarea Philippi*. After being transfigured on a mountain in *Galilee*, he returned privately to *Capernaum*.



R. *Road from Bethany*; B. *Pool of Bethsaida*; H. *Palace of Herod in Bezetha*; P. *Pretorium, or residence of Pilate*; A. *House of Annas in Acra*; C. *House of Caiaphas*; S. *Pool of Siloam*.

A. D. 29. AT THE CLOSE OF HIS MINISTRY, Jesus knowing that the period of his sufferings was at hand, directed his course to *Jerusalem*, first entering *Samaria*, where he was not permitted to remain. Then crossing the *Jordan*, he went through *Peræa*, and repassing at *Jericho*, went through *Bethany* to *Jerusalem*, where he arrived on the first day of the week, (Sunday,) and was received by a multitude, who spread their garments in the road. It was on the *Mount of Olives*, on which *Bethany* was situated, and which commanded a view of the city of *Jerusalem*, that our Saviour wept over it, and here he foretold its ruin to his disciples. Jesus remained in *Jerusalem*, teaching in the temple, and at *Bethany*, until the fifth day of the week, (Thursday) when he celebrated the Passover with his disciples in *Jerusalem*. In the evening, he went with his disciples to the *Mount of Olives*. When they came to the *Garden of Gethsemane*, he retired into a solitary spot, and "being in an agony, he prayed more earnestly; and his sweat was as it were great drops of blood, falling down to the ground."

"Immediately after, he was seized by the Jews and led away bound to the house of Annas, *A.* and thence to the Palace of Caiphas, *C.* where he was arraigned and examined before the Sanhedrim. In the morning of the sixth day, (Friday,) he was led away bound to the Judgment Hall or pretorium of Pilate, *P.* and thence was sent by Pilate to the Palace of Herod, *H.* He was then brought back to the Judgment Hall, *P.* and condemned; and in the afternoon was led away to *Mount Calvary*, where he was crucified."

In the evening he was buried in a tomb near the place of crucifixion. On the morning of the first day of the week, (Sunday,) he arose from the tomb and appeared to his disciples near it. In the course of the day, he appeared to Peter, to two disciples on their way to *Emmaus*, and to the apostles assembled in *Jerusalem*. Afterwards he appeared to the apostles near the *Lake of Galilee*, to 500 of his followers on a mountain near it, and again to the apostles in *Jerusalem*. He then led them out to the *Mount of Olives*, "and it came to pass that while he was blessing them, he was parted from them and carried up into heaven."

Questions.—For what is Bethlehem highly distinguished? In what direction is Bethlehem from Egypt? Where did our Saviour reside after his return from Egypt? In what direction is Jerusalem from Nazareth? Jordan from Nazareth? Where was Cana and how distinguished? Describe the places passed through, and the direction of the journey from Capernaum to Jerusalem, Capernaum to Nain, the sea of Galilee and Gadara, from Jerusalem to Bethany, by Ephraim to Capernaum, to Tyre and Sidon, Magdala and Cæsarea.

Describe the last journey of Jesus from Capernaum through Perræa to Jerusalem. Describe his daily walk from Bethany to the temple, following the road —(*See the Plan of Jerusalem.*) Where was Gethsemane? Describe the places to which he was carried before his crucifixion. Where was Calvary? Where was the last appearance of Jesus.

VIEW OF THE TRAVELS OF THE APOSTLE PAUL FROM HIS CONVERSION TO HIS DEATH.

The countries through which St. Paul journeyed, comprised the greater part of Asia Minor and of Greece.

A. D. 36. His conversion took place on his journey from *Jerusalem* to *Damascus*. From A. D. 37, to A. D. 40, he probably resided in *Arabia* and *Damascus*. 40—Thence he went to *Jerusalem* and *Cæsarea* and sailed to *Tarsus*, thence probably through *Cilicia* and *Syria*. 43—To *Antioch*. 44—To *Jerusalem* and back to *Antioch*.

A. D. 45. First apostolic journey—From *Antioch* to *Seleucia*, and by sea to *Salamis* in *Cyprus*. Thence to *Paphos*, *Perga*, *Antioch* in *Pisidia*, *Iconium*, *Lystra*, and *Derbe*; and back again through *Lystra*, *Iconium*, *Antioch* and *Perga* to *Attalia*, whence he sailed for *Antioch*, in Syria, and resided there a considerable time.

A. D. 49. Second apostolic journey—From *Antioch* though *Phœnicia* and *Samaria* to *Jerusalem*, and back to *Antioch*. 50—After a short residence at *Antioch*, thence through *Syria*, *Cilicia*, *Derbe* and *Lystra*; throughout *Phrygia*, probably to *Hierapolis*, *Laodicea*, and *Colossæ*; through *Galatia*, and (being forbidden to preach there,) to *Mysia* and *Troas*. Thence he sailed to *Samothrace*, and went through *Neapolis*, *Philippi*, *Amphipolis*, *Thessalonica*, *Apollonia*, and *Berœa* to *Athens*. 51—To *Corinth*, where he resided a year and a half. Thence to *Cenchrea*, and embarking for *Syria*, touched at *Ephesus*, and landed at *Cæsarea*; thence to *Jerusalem*, and *Antioch*.

A. D. 53. Third apostolic journey—From *Antioch* through *Galatia* and *Phrygia* to *Ephesus*, where he resided three years. 56—Thence by *Troas* to *Macedonia*. 57—Through *Greece* to *Corinth*, and returned through *Macedonia* *Philippi*, *Troas* and *Assos*. Thence sailing by *Mitylene*, *Chios* and *Samos*, he touched at *Trogyllium*, *Miletus*, *Cos*, *Rhodes*, *Patara*, *Tyre*, and *Ptolemais*, landed at *Cæsarea*, and went to *Jerusalem*, A. D. 58. At Jerusalem he was made prisoner, carried through *Antipatris* to *Cæsarea*, and detained there in bonds.

A. D. 60. JOURNEY TO ROME—He was embarked a prisoner for Rome, touched at *Sidon*, sailed north of Cyprus and touched at *Myra;* thence to *Cnidus* and *Salmone* to *Fair Havens.* The ship was driven by Clauda and wrecked on *Melita*, where he resided three months. 61—Thence by sea to *Syracuse*, *Rhegium* and *Puteoli*, and by land to *Appii Forum*, and the *Three Taverns* and to *Rome.* This concludes Luke's account in the Acts.

The remaining history is uncertain. It is supposed that Paul was liberated in A. D. 63, and went to *Crete*, *Colossæ*, *Ephesus*, and *Philippi*, and other parts of Macedonia, wintering at *Nicopolis*. 64—Back to *Ephesus*, stopping at *Troas*. Thence to *Miletus* and *Corinth* and to *Rome*, where he is believed to have suffered martyrdom.

Questions.—What were the places passed through by St. Paul, and the general course of his journeys to each, previous to his first Apostolic journey? Describe his first Apostolic journey in the same manner.—In what countries was it? Describe his second Apostolic journey. In what country did he travel chiefly, during his third apostolic journey, and what was his course? Describe his journey and voyage to Rome.

A METHOD OF MAKING MAPS,

By which the Pupil may unite the studies of Geography, Chronology, and History.

DIRECTIONS TO THE PUPIL.

Having now studied the maps and chronology, make out for yourself a map, corresponding to the date of each of the epochas of the chronology. As so very little is known of the first epocha, it may be taken in conjunction with the second. There will then be, for the time before Christ, five maps; the first to be dated at the close of the second epocha, the second at the close of the third, and so on. For the five maps, take five sheets of paper of equal size. As the natural geography is the same in each period of time, of course all the maps will be alike as to continents, seas, rivers, &c. and having made one the others can be traced with a pencil while lying over it. In making these maps, you cannot fail of fixing the natural geography of this part of the globe firmly in your memory. When you have proceeded thus far, begin with the map which you date at the close of the second epocha, and make out, as correctly

as you can, the historical geography of that period; then proceed in the same manner with the one dated at the close of the third epocha, and so with the rest.

Do not set down the names of cities which did not exist at the date of the map you are filling up, or any names of countries, rivers, or mountains, which were unknown at that time. To find out what were known, and what were unknown, consult your table of Chronology, and the list of ancient names at the end of the book. When found, your ancient maps will show you where they are to be placed upon your own.

In going from your first to your fifth map, you will generally set down on each what the former contained, and have much to add; but changes in the boundaries of countries will usually be needed, and sometimes it will be proper to drop the names of cities; as none should be retained in a map dated after its destruction. Having made your maps as perfect as you can from the study of this book, lay them carefully by in a portfolio, till you commence the study of history. When you have studied the history of the first and second epocha, add to your first drawing such particulars of your knowledge as admit of being marked upon a map; when you have studied the history of the third epocha, proceed in the same manner as with your second, and so of all the others.

On each, you can set down among other things, the routes of celebrated persons, who have led armies, founded colonies, or performed other remarkable expeditions during the epocha of he map.

If you find your maps of the first epochas barren of historical information, this will show you the scantiness of authentic materials for history during the early ages; and the gradual filling up your maps, with names of cities, boundaries of countries, &c. will make you sensible of the gradual advancement of mankind towards their present state.

If the boundary of a country, or any other circumstance, is doubtful, let it not be marked with ink or paint, but with a pencil. This stands upon your map to be settled by future reading, and whenever you shall have satisfied yourself concerning the fact, then mark it with something permanent; but if it is a disputed or uncertain point, let it always remain marked with a pencil. Many people in their impatience to get rid of uncertainty, embrace error. Indeed, to suppose things fixed and settled, which in their nature can never be made so, is itself an error, and becomes the source of many others.

You may make these maps a means of improvement to you, not only during your school days, but as long as you live.—Whenever at any time, you shall by reading or other means, have increased your knowledge of historical geography, add to your map. This will be an easy method of calling to recollection what you have before learned, of fixing in your memory the facts just acquired, and what is very important, of keeping the whole arranged in systematic order.

A CATALOGUE OF ANCIENT NAMES,

ARRANGED ACCORDING TO THE EPOCHAS IN WHICH THE PLACES BECAME KNOWN TO THE ANCIENTS.

Rules for Pronouncing the Vowels of Latin and Greek Proper Names.

Every vowel with the accent on it at the end of a syllable is pronounced as in English, with its long open sound, as Pho'cis. Every accented vowel not ending a syllable, but followed by a consonant, has the short sound. Thus Colchis has the short sound, as in collar. Every unaccented *i*, ending a syllable not final, has the sound of *e*, as in Hernici, pronounced Herneci, the second syllable of Boii, as if Boei.

The dipthongs *æ* and *œ* as long *e*, Œta pronounced Éta.

E final always forms a distinct syllable.

A ending an unaccented syllable has a sound bordering on the *a* in father.

Consonants.

C and *G* are hard before *a*, *o*, and *u*, and soft before *e*, *i*, and *y*. *T*, *C*, and *S*, in proper names, ending in *tia*, *sia*, *cion*, *cyon*, *sion*, preceded by the accent, change the *T*, *C*, *S*, into *sh*, as Sicyon and Phocion, pronounced as if Sisheon and Phosheon, and Galatia, Galashea.

T, *S*, and *C*, before *ia*, *ie*, *ii*, *io*, *iu*, and *eu*, preceded by the accent, in Latin words, change into *sh*, and *zh*, as Accius, Helvetii, pronounced Aksheus, Helveshei.

Ch before a vowel is pronounced like *k*, but when these letters come before a mute consonant at the beginning of a word, as in Chthonia, they are mute.

In Latin, *c* before *n* and *t*, and *g* before *n*, are mute. When *Mn*, and *Tm*, commence words, the first consonant is mute. *Ph* followed by a consonant is mute, as Phthiotis, pronounced Thiotis. *X* commencing words has the sound of *z*, as in Xanthus. In Hebrew proper names, *G* is hard before *e* and *i*, as in Gera, Gilgal.

COUNTRIES.

1st *Epocha*, from 2348 to 1921.

Ara'bia
A'ria
A'sia Mi'nor
Assyr'ia
Babylo'nia
Bactria'na
Chaldæ'a
Col'chis
E'gypt
Ethio'pia
Maco'nia
Me'dia
Mesopota'mia
Per'sia
Sic'yon
Susia'na
Syr'ia

2d *Epocha*, from 1921 to 1491

Arca'dia
Ar'golis
At'tica
Bœo'tia
Ca'naan

Cappado'cia
Cilic'ia
Corin'thia
Epi'rus
Græ'cia
Illyr'icum
Laco'nia
Lyc'ia
Lyd'ia
Mys'ia
Phœnic'ia
Thessa'lia
Thra'cia
Tro'as

3d *Epocha*,
from 1491 to 980.

Æo'lia
Ash'er
Ben'jamin
Ca'ria
Dan
Do'ris of Peloponne'sus and A. Minor
E'lis of P. and A. M.
E'phraim
Gad
Io'nia of P. and A. M.
Is'sachar
Italy
Ju'dah
Lo'cris
Lyb'ia
Magnesia
Manas'seh
Meg'aris
Messe'nia
Myce'ne
Naph'thali
Pœo'nia
Palesti'na
Paphlago'nia
Pelas'gia
Perrhæ'bia
Pho'cis
Phryg'ia
Reu'ben
Sim'eon
Zeb'ulon

4th *Epocha*,
from 980 to 753.

Cyrena'ica
Carma'nia
Etru'ria
Gedro'sia
In'dia within the Ganges
La'tium
Macedo'nia

5th *Epocha*,
from 753 to 356.

Alba'nia
Af'rica Pro'pria
Apu'lia
Acarna'nia
Bar'ca
Bo'ii
Bœo'tia
Bythin'ia
Campa'nia
Cili'cia
Cur'es
Da'cia
Edon'ica
Ethio'pia
Fale'rii
Gal'lia
Hycra'nia
Ibe'ria
In'subres
La'tium
Lingo'nes
Luca'nia
Lyb'ia
Lyc'ia
Mœs'ia
Mys'ia
Nu'bia and Abyssin'ia
Pamphyl'ia
Phryg'ia
Pice'num
Pie'ria
Sabi'ni
Sa'cæ
Sam'nium
Scyth'ia
Sogdia'na
Thespro'tia
Um'bria
Vol'sci

6th *Epocha*,
from 356 to the birth of Christ.

Acha'ia
Adiabe'ne
Al'bion
Aquita'nia
Bel'gica
Bœ'tica
Britan'nia
Brut'tium
Caledo'nia
Cœlo-Syr'ia
Chalcid'ice of Syria
Chao'nia
Charace'ne
Commage'ne
Darda'nia
Elyma'is
Ema'thia
Euga'nei
Gala'tia
Galilæ'a
Gætu'lia
Gil'ead
Hiber'nia
Hispa'nia
Hyrca'nia
Idumæ'a
In'dia
In'dia beyond the Ganges
Isau'ria
Judæ'a
Ligu'ria
Lusita'nia
Lugdunen'sis
Magne'sia
Maurita'nia
Meg'aris
Mœ'sia
Molos'sis
Nor'icum
Narbonen'sis
Numid'ia
Per'gamus
Philis'tia
Phthio'tis
Pie'ria
Pisid'ia
Pon'tus
Sama'ria
Seri'ca
Si'noe
Syr'ia Pro'pria
Tarraconen'sis

CITIES.

1st *Epocha*,
from 2348 to 1921.

Ar'gos
Bab'ylon
Ga'za
Je'bus or Jeru'salem
Mem'phis
Nin'eveh
Sic'yon
The'bæ of Egypt
Zi'don

2d *Epocha*.

Athe'næ
Co'rinth
Heriop'olis of Egypt
Latop'olis
Spar'ta
The'bæa of Bœotia
Tro'ja
Ty'rus

3d *Epocha.*

Al'ba
Au'lis
Anthe'don
As'calon
As'ine
Amy'cle
A'gydos
A'lis
Chal'cis
Cy'phus
Cyto'rus
Col'ophon
Clazom'ene
Carys'tus
Cylle'ne
Cal'ydon
Dodo'na
Damas'cus
Epidau'rus
Eph'esus
E'zion-Ge'ber
Ere'tria
E'lis
Gnos'sus
Gorty'na
Hen'eti
He'bron
Hermi'one
He'los
Ito'nia
Itho'me of Thessalia
Jer'icho
Lari'sa
Lac'hish
Lin'dus
Magne'sia
Myc'ale
Mile'tus
Mæo'nia
Mes'se
Mantine'a
Metho'ne
Melibœ'a
Orchom'enus of Bœo'tia
O'pus
Oloos'son
Orchom'enus of Arcadia
Platæ'a
Pelle'ne
Py'los
Pleu'ron
Phe'ræ
Ses'tos
Thes'piæ
This'be
Thym'bra
Troze'ne
Tegæ'a
The'bæ of Thessa'lia
Thauma'sia
Ze'lia

4th *Epocha.*

Car'thago
Ro'ma
Sama'ria
Syracus'æ

5th *Epocha.*

Aspada'na
Archela'is
Agrigen'tum
Abde'ra
Alba'na
Arbe'la
Artemis'ium
Byzant'ium
Cyres'chata
Colos'sæ
Cap'ua
Cyz'icum
Chal'cedon
Croto'na
Clazome'ne
Cyr'ne
Doris'cus
Ecbata'na
Eph'esus
Eleu'sis
Ge'ta
Heracle'a
Him'era
Is'sus
Lamp'sacus
Mar'athon
Mygdo'nia
Myc'ale
Mile'tus
Oro'pus
Olym'pia
Pasar'gadæ
Pelu'sium
Pa'rium
Phocæ'a
Platæ'a
Rhe'gium
Sar'dis
Sino'pe
Su'sa
Syb'aris
Tegæ'a
Taren'tum
Telmis'sus
Tan'agra
Ther'ma
Thermop'ylæ
Tra'chys

6th *Epocha.*

Antio'chia
Ac'tium
Ancy'ra
Alexan'dria
Adrume'tum
Apame'a
Ambra'cia
Apollo'nia of Epi'rus
Amphip'olis
As'culum
Arethu'sa
Arim'inum
Brundu'sium
Bibrac'te
Can'næ
Cap'sa
Cann'sium
Clu'sium
Cu'mæ
Deme'triæ
Dyrrach'ium
Edes'sa
Em'esa
Gor'dium
Gad'ara
Gena'bum
Gergo'via
Is'sedon of Scyth'ia
Is'sedon of Seri'ca
Lute'tia
Melodu'num
Numan'tia
Nar'bo
Noviodu'num
Paliboth'rae
Per'gamus
Persep'olis
Placen'tia
Pel'la
Pyd'na
Prænes'te
Sagun'tum
Selu'cia
Scythopo'lis
Tar'raco
Tu'nis
Thyati'ra
Tolo'sa
Vologe'sia
Verula'mium
Vien'na
Za'ma

RIVERS.

1st *Epocha.*

Choas'pes
Euphra'tes
Gyn'des
In'dus
In'achus of Ar'golis
Jor'dan
Ly'ces
Ke'dron
Myg'donus
Nile
Phys'cus
Ti'gris
Tit'ana

2d *Epocha.*

Alphe'us
Cephis'sus of Bœo'tia
Euro'tas
His'sus
Ly'cus
Oron'tes
Pene'us of E'lis

3d *Epocha.*

Ado'nis
Ach'eron
Æs'epus
Pha'sis
Pami'sus
Pene'us of Thessaly
Si'mois
Scaman'der
Sperchi'us
Styx

4th *Epocha.*

Pacto'lus

5th *Epocha.*

Arax'es
Apid'anus
Æso'pus
A'nio
Ar'nus
Borys'thenes
Cai'cus
Danubi'us
Erid'anus
Eni'peus
Ha'lys
Hæ'mus
Hyp'anis of Scyth'ia
Hyp'anis of Sarma'tia
He'brus
Ly'cus
Mean'der
Nes'tus
Onoch'onus
Pantic'apes
Pyr'amus
Ru'bicon
Stry'mon
Tan'ais
Ty'ras
Thermo'don
Ty'bris

6th *Epocha.*

Ao'ris
Aliac'mon
Ax'ius
Æ'gos Pot'amos
Du'rius
Hydas'pes
Hyph'asis
Hydrao'tes
Her'mus
Jom'anes
I'ris
Jaxar'tes
Metau'rus
Ox'us
Pa'dus
Pacto'lus
Rhyn'dacus
Rhod'anus
Tre'bia

MOUNTAINS.

1st *Epocha.*

Ar'arat

2d *Epocha.*

Ho'reb
Olym'pus
Os'sa
Si'nai

3d *Epocha.*

Car'mel
Gil'ead
Her'mon
I'da
Ne'bo
Pis'gah

5th *Epocha.*

A'thos
Cithæ'ron
Hymet'tus
Myc'ale
O'thrys
Œ'ta
Pe'lion
Pin'dus
Parnas'sus
Pangæ'us
Tay'getus
Tmo'lus

6th *Epocha*

Alpes
Apenni'nus
Pyrennæ'i

ISLANDS.

3d *Epocha.*

Cre'ta
Cos
Cephalle'nia
Corcy'ra
Calyd'na
Ca'sus
Car'pathus
Egi'na
Ith'aca
Lem'nos
Nisy'rus
Rho'des
Sal'amis
Sic'ily
Ten'edos
Zacyn'thus

5th *Epocha.*

Chi'os
Cythe'ra
Cyr'nus
Cyth'nus
Cy'prus
De'los
Im'bros
Les'bos
Lin'dus
Œnus'sæ
Nax'os
Platæ'a
Proconne'sus
Pa'ros
Re'nea
Sa'mos
Sardin'ia
Siph'nos
Samothra'cia
Sci'athus
Seri'phos
Te'os
Tha'sos
The'ra

6th *Epocha.*

Al'bion
Caledo'nia
Hiber'nia

PROBLEMS ON THE GLOBES AND MAPS,

WITH RULES FOR THE

CONSTRUCTION OF MAPS:

PREPARED BY W. C. WOODBRIDGE,

*To accompany the "Rudiments of Geography," and "Elements of Universal Geography."**

PROBLEMS ON THE MAPS.

A *Globe* is a round body, having every part of its surface equally distant from a point, called the centre.

There are two sorts of *artificial globes;* the *Celestial* and the *Terrestrial.*

The *Celestial Globe* has on its surface a representation of all the visible stars in the heavens, and the images or figures of all the various constellations in which these stars are arranged.

The *Terrestrial Globe* exhibits a delineation of all the parts of sea and land, in their proper situations and distances, just as they are in nature.

Each Globe consists of the following parts, viz.

1. The *Two Poles*, or the ends of the axis on which the globe turns, represent the poles of the world. The upper is the North Pole, and the lower the South Pole.

2. The *Brass Meridian*, divided into four quarters, and each quarter into ninety degrees. This circle surrounds the globe and is joined to it at the poles.

3. The *Wooden Horizon* which surrounds the globe. The upper part represents the true horizon, and has several circles drawn upon it. The inner one contains the twelve signs of the Zodiac, through which the sun, or earth, revolves in a year; these are subdivided into degrees; the next circles exhibit the signs of the Zodiac divided into degrees, and the days of the month to which they correspond.

4. The *Hour Circle* divided into twice twelve hours, fitted to the brass meridian, round the north pole. The twelfth hour at noon, is upon the upper part of it, at the Meridian, and the twelfth hour at night is upon the lower part, towards the horizon.

5. The *Quadrant of Altitude*, which is a thin slip of brass, divided into ninety degrees, of the same size with those on the equinoctial line. It may be screwed on occasionally to the top of the brass meridian, to measure the distances of places.

6. The *Mariner's Compass*, usually fixed under the globe. This is a box containing a magnetic needle, and the thirty-two points of the compass.

---

* These articles are published in connection with the Ancient Geography, to accommodate the purchasers of the Rudiments of Geography. The problems were taken chiefly from Guy.

CIRCLES ON THE GLOBES.

On the surface of the globe are drawn ten circles; six of which are called the *Great Circles*, and four the *Less Circles*.

The *great circles* divide the globe into two equal parts. They are the Equator or Equinoctial, the Horizon, the Meridians, the Ecliptic, and the two Colures.

The *less circles* divide the globe into unequal parts. They are the two Tropics and the two Polar Circles.

1. The *Equator* separates the globe into the northern and southern hemispheres. It is divided into one hundred and eighty degrees each way, from the first or chief meridian; or into three hundred and sixty degrees, if reckoned quite round the globe.

2. The *Horizon* is either *sensible* or *rational*. The *sensible* horizon is that circle we see in a clear day, where the sky and water or earth seem to meet: so that each place has its own sensible horizon. That called the *rational* horizon encompasses the globe exactly in the middle, and is represented by the wooden frame before mentioned.

The *Cardinal Points* are the four principal points of the horizon; north, south, east, and west.

The *Zenith* is the uppermost pole of the horizon, an imaginary point in the heavens, directly over our head. On the artificial globe, it is the most elevated point on its surface in which the eye of the spectator can be placed.

The *Nadir* is the lower pole of the horizon; that is, an imaginary point directly under the feet, and consequently diametrically opposite to the zenith.

3. The *Meridians* are those circles that pass from pole to pole, and divide the globe into the eastern and western hemispheres. They are so called, because, when the sun comes to the south part of either of these circles, it is then mid-day, or *meridies*, to all places lying under the line. The sun at that time has its greatest altitude for that day, which is therefore called its meridian altitude.

There are commonly marked on the globes twenty four meridians, one through every fifteen degrees, corresponding to the twenty four hours of the day and night. But every place, though ever so little to the east or west, has its own meridian.

The first meridian on our maps is usually drawn through London, or more properly Greenwich, but often through Washington.

4. The *Ecliptic* or *Zodiac* represents that path in the heavens which the sun seems to describe by the earth's annually revolving round it. It is divided into twelve equal parts, called signs, and each sign contains thirty degrees; corresponding to the twelve months of the year, and the days of the month.

It is called the *ecliptic*, because the *eclipses* must necessarily happen in this line, where the sun always is.

The names and characters of the twelve signs *with the time of the sun's entrance into them*, are as follows;

1. Aries, ♈ or	the Ram;	March 20th.
2. Taurus, ♉	the Bull;	April 20th.
3. Gemini, ♊	the Twins;	May 21st.
4. Cancer, ♋	the Crab;	June 21st.
5. Leo, ♌	the Lion,	July 23d.
6. Virgo, ♍	the Virgin;	August 23d.
7. Libra, ♎	the Balance;	September 23d.
8. Scorpio, ♏	the Scorpion;	October 23d.
9. Saggittarius, ♐	the Archer;	November 22d.
10. Capricornus, ♑	the Goat;	December 22d.
11. Aquarius, ♒	the Waterman;	January 20th.
12. Pisces, ♓	the Fishes;	February 19th.

The first six are called the *northern signs*, as they lie in the northern hemisphere, and the last six are the *southern signs*.

NOTE.—By this division of the ecliptic we can more readily point out the sun's place in the heavens, for any given time, by saying, "It is in such a degree of

such a sign." The earth, in performing its annual revolution round the sun, advances thirty degrees every month in each of these signs, which causes the sun apparently to do the same in the opposite one; thus, when the earth is in Libra, the sun appears to be in Aries, which is the opposite sign; when in Scorpio, we see the sun in Taurus; and so on through the rest.

5 and 6. The *two Colures* are two meridians, which pass through the poles of the world; one of them through the equinoctial points Aries and Libra, and therefore called the *equinoctial Colure:* the other through the solstitial points, Cancer and Capricorn, and are therefore called the *solstitial Colure.*

These circles divide the surface of the globe into four equal parts, denoting the seasons of the year.

7 and 8. The *two Tropics* are circles drawn parallel to the Equator, at twenty-three degrees and a half distance from it, one on the north side and the other on the south. That in the northern hemisphere touches the ecliptic in the beginning of Cancer, and it is therefore called the Tropic of Cancer. That in the southern hemisphere is called the Tropic of Capricorn, because it touches the ecliptic in the beginning of that sign.

The word "tropic" denotes a return, because in these points the sun returns again to the equinoctial line.

These circles are usually marked on the globe by *dots*, to distinguish them from other parallels.

9 and 10. The *two Polar Circles* circumscribe the poles of the world, at the distance of *twenty-three degrees and a half.* That on the north pole passes through the constellation called *Arctos* or the *Bear*, from whence it is called the *Arctic* circle; and that which is opposite to it about the south pole is called the *Antarctic* circle.

Both these are also marked on the globe by dotted lines.

NOTE.—Observe that the term "axis" means only an imaginary straight line passing through the centre of a globe or circle, upon which it is supposed to turn. This axis is expressed in artificial globes by a wire passing through the middle to support them, from one pole to the other, and the extreme points of this line are the poles of the world.

The circumference of the globe for the convenience of measuring, is supposed to be divided into 360 parts or degrees, each degree containing 60 geographical miles, which are equal to about 69 English miles.

The degrees are in like manner each subdivided into 60 minutes, (marked thus, ′,) and each minute into 60 seconds, (marked thus, ″,) for the purpose of measuring time.

The globe is measured by *latitude* from *north* to *south*, and by *longitude* from *east* to *west*.

Latitude is reckoned from the equator towards the poles, either north or south, and no place can have more than 90 degrees of latitude, because the poles are at that distance from the equator.

Parallels of Latitude are those imaginary lines which are carried round the globe in a direction parallel to the equinoctial line, and at the distance of ten degrees from each other, in both northern and southern hemispheres.

Longitude has no particular spot from which we ought to set out in preference to another. English geographers take their first meridian at London or Greenwich, and reckon the distance of places east or west from thence. Therefore the circumference of the earth being 360 degrees, no place can be more than half that distance (that is, 180 degrees) in the same direction from another. Voyagers frequently count their longitude beyond that, to save confusion by changing their reckoning.

The degrees of longitude are not equal, like those of latitude, but diminish as they approach the poles, as may be seen in the table of longitude.

With regard to heat and cold, the earth is divided into five zones, viz. one called the *torrid* zone, two *temperate* zones, and two *frigid* zones.

The *torrid*, or *burning zone*, is all that space lying between the tropics. The inhabitants of this zone have the sun vertical two days in the year, and are subject to a constant extreme of heat, as the sun never passes beyond the tropics.

The two *temperate zones* are all those parts lying between the tropics and the polar circles; consequently, there is one of these in the northern, and one in the southern hemisphere. We, in the United States, are inhabitants of the north temperate zone.

The two *frigid zones* lie between the polar circles and the poles, and have their name from the excessive cold in those parts.

PROBLEM I.—*To find the Latitude and Longitude of any place.*

To find the Latitude.—Bring the place to the graduated side of the brass meridian, and the figure that stands over it shows its *latitude*, or distance from the equator. Thus the latitude of London is 51 degrees and a half north—the latitude of the Cape of Good Hope is 34 degrees and a half south.

To find the Longitude.—Observe the degrees the brass meridian cuts on the equator, and that is its *longitude* or distance either eastward or westward. Thus the longitude of the Cape of Good Hope is nearly 18 degrees and a half east. London, of course, can have no longitude from itself because the first meridian begins there. Constantinople is 41 degrees N. lat. and 29 degrees E. long. nearly.

What is the latitude of Edinburgh? Paris? Petersburgh? Rome? Pekin? Copenhagen? Quebec? Boston? Philadelphia?

What is the longitude of Madrid? Venice? Berlin? Naples? Cape Horn? Cape Verd? Washington? New-Orleans? New-York?

Find the latitude and longitude of Stockholm, Vienna, Calcutta, Cairo, Mexico, Barbadoes, Quito, Rio Janeiro.

PROBLEM II.—*The Latitude and Longitude of any place being given, to find that place upon the globe.*

Bring the given longitude found on the equator to the brass meridian: look for the given latitude on the meridian, and under the degree is the place sought.

Thus, suppose two ships come to an engagement in 36° 20′ north latitude, and in 32° longitude west from London, you will find it to be in the Atlantic Ocean, a little south of the Azore Islands.

What towns lie nearly in the following latitude and longitude?

Lat. 34½ *S.*	*Long.* 18¾ *E.*	*Lat.* 60 *N.*	*Long.* 5½ *E.*
Lat. 56 *N.*	*Long.* 3 *W.*	*Lat.* 75 *N.*	*Long.* 40½ *W.*
Lat. 42 *N.*	*Long.* 70 *W.*	*Lat.* 18 *N.*	*Long.* 77 *W.*

PROBLEM III.—*To find the difference of Latitude or Longitude between any two places.*

Find the latitude or longitude of each on the globe or map, and count the number of degrees from one meridian or parallel to the other.

Otherwise, 1. If the latitudes or longitudes are both in the *same direction*, i. e. both east or both west, both north or both south, subtract the less from the greater, and the remainder will be the difference.

2. If they are in *different directions*, add them together, and the sum will be the difference of latitude or longitude.

Find the difference of latitude and longitude of

Paris and Philadelphia,	*Mexico and Calcutta,*
London and New York,	*Pekin and Petersburgh,*
Cairo and Raleigh,	*Boston and New Orleans.*

PROBLEM IV.—*To find the Sun's place in the Ecliptic at any time.*

The month and day being given, look for the same on the wooden horizon, and over against the day you will find the particular sign and degree in which the sun is at that time. The sign and degree being noted in the Ecliptic, will be the sun's place, or nearly, at the time desired. Thus, on the 11th of May, the sun's place is in the 21st degree of Taurus.

Find the sun's place in the ecliptic for.

March 20th.	*June 21st.*	*September 23d.*
April 21st.	*July 4th.*	*October 20th.*
January 30th.	*December 21st.*	*November 5th.*

PROBLEM V.—*To rectify the Globe for the latitude of a place.*

Move the brass meridian higher or lower, till the pole stands as many degrees

above the wooden horizon as the latitude of the place is for which you would rectify. Thus, if the place be London, you must raise the north pole 51 1-2 degrees, (because that is the latitude of it,) which brings that city to the top or zenith of the globe, and over the centre of the horizon.

NOTE.—In all problems relating to *north* latitude, you must elevate the north pole; but in those that have *south* latitude, you must raise the south pole. And observe, that the north pole must always incline to that part of the horizon marked June, and the south pole to that marked December.

The zenith's latitude must be reckoned upon the brass meridian, from the equator towards the elevated pole, and if the quadrant of altitude be wanted, it must be screwed on there. Thus, for London, it must be so placed as that the graduated edge may cut 51° 30′ of the meridian, because that is the zenith, or centre point.

Set the brass meridian of the globe north and south, by the compass, so that the north pole of the globe may be towards the north part of the world, taking care to allow for the variation of the compass.

These things being done, the globe is *rectified*, that is, put into a position similar to the natural situation of the earth, on any given day for the latitude of the place.

PROBLEM VI.—*To measure the Distance from one Place to another.*

Fix the quadrant of altitude over one of the given places, and extend it to the other. This will show the number of degrees between them; which being multiplied by 60, will give the distance in geographical miles. If you would know the distance in English miles, you must multiply the degrees by 69, which will give it very nearly.

Find the distance between

New York and London	*Boston and Jerusalem*
London and Rome	*Charleston and Cairo*
Gibraltar and Naples	*Mexico and Barbadoes*
Jamaica and Sierra Leone	*Vienna and Venice.*
Paris and Philadelphia.	

PROBLEM VII.—*To find the true bearing or direction of one place from another.*

Rectify the globe to the latitude of one of the places, and bring it to the brass meridian; then fix the quadrant of altitude over that place, and extend it from thence to the other, and the end will point out the direction upon the horizon. Thus, if it were required to know the direction of Rome from London, the globe being rectified, London brought to the brass meridian, and the edge of the quadrant of altitude laid to Rome, you will find the end fall against that part of the wooden horizon marked S. E. or South East.

What is the true bearing of

London from New York	*Madrid from Lisbon*
Vienna from Jerusalem	*Petersburgh from Berlin*
Rome from Gibraltar	*Jerusalem from Boston?*

PROBLEM VIII.—*To find at any Hour of the Day what o'clock it is at any Place in the world.*

Bring the place where you are to the brass meridian, set the index to the hour given; turn the globe till the place you want comes under the meridian, and the index will point out what the hour is at that place. Thus when it is six o'clock in the evening in England, it is about half past eight at night at Jerusalem, and nearly one o'clock in the afternoon at Jamaica.

On the Map reckon the number of degrees of Longitude east or west, and put them into hours. Fifteen degrees are equal to an hour; and 1 degree to four minutes. Or, on the Chart of the World, where the meridians are drawn every 15 degrees, count the number of meridians from one place to the other, and you will have the number of hours difference in their time.

If the place is *East* of the place given, the time of that place is so many hours later than those of the place given; if *West*, so many hours earlier than those of the place given

When it is noon at Washington, what is the hour at

Rome	*Constantinople*	*Calcutta*	*Pekin,*
Owyhee	*Mexico*	*Jamaica*	*Quebec?*

When it is noon at Calcutta, what is the hour at

Cairo	*Jerusalem*	*Vienna*	*Paris*
London	*Bermuda Isles*	*Philadelphia*	*Cape Horn*
Quito	*Gallipago Isles*	*Otaheite*	*Port Jackson?*

When it is 9 in the morning at New Orleans, what is the hour at

Bergen	*Stockholm*	*Moscow*	*Berlin?*

When it is 6 in the evening at Barbadoes, what is the hour at

Madrid	*Ispahan*	*Nankin*	*Naples*
Venice	*Moscow*	*Petersburgh*	*London?*

PROBLEM IX.—*To find at what Hour the Sun rises or sets, any day in the Year, and also upon what Point of the Compass.*

Rectify the globe for the latitude of the place you are in; bring the sun's place or the day given to the brass meridian, and set the index to 12; then turn the sun's place to the eastern edge of the wooden horizon, and the index will point out the hour of rising; if you bring the sun's place to the western edge, the index will show the time of its setting.

In the *summer* the sun rises and sets to the *northward* of the east and west points, but in *winter* to the *southward* of them. Therefore, when the sun's place is brought to the eastern or western edge of the horizon, you will there see the point of the compass upon which the sun rises or sets that day.

At what hour does the sun rise at New York on

January 1st *February 10th* *April 20th* *June 21st?*

On what point of the compass does the sun rise at Rome on the

1st of May *11th of July* *19th of September?*

PROBLEM X.—*To find the Length of the Day and Night at any time of the Year.*

Only double the time of the sun's rising that day, and it gives the length of the night; double the time of its setting, and it gives the length of the day. Thus on the 25th of May, the sun rises at London about four; and sets about eight; therefore the day is sixteen hours long, and the night eight hours.

Or, rectify the globe for the latitude, bring the sun's place to the western part of the horizon, and set the index to twelve at noon; turn the globe eastward till the sun's place comes to the eastern part of the horizon, and the hours passed over by the index will be the length of the day, and the remaining hours will be the length of the night.

What is the length of the day at London on the

1st of March *3d of July* *16th of August?*

What is the length of the day at Philadelphia on the

3d of February *16th of August* *25th of November?*

What is the length of the night at Quebec, on the 20th of March, and on the 23d of September?

PROBLEM XI.—*To find the Length of the longest and shortest days and Nights in any Part of the World.*

Elevate the pole according to the latitude of the given place, and bring the first degree of Cancer to the brass meridian (if the given place be in north latitude,) and set the index to twelve; then bring the same degree of Cancer to the east part of the wooden horizon, and the index will show the time of the sun's rising. If the same degree be brought to the western edge, the index will show the setting; which being doubled, (as in the last problem) will give the length of the longest day. By subtracting this from twenty-four hours, we have the length of the shortest night. If we bring the first degree of Capricorn to the brass meridian' and proceed in all respects as before, we shall have the length of the longest night and shortest day. Thus, at Delhi, the longest day is about fourteen hours, and the shortest night is about ten hours; the shortest day is ten hours, and the longest night fourteen hours.

At Petersburgh, the longest day is about eighteen hours and a half, and the shortest night about five hours and a half. The shortest day is five hours and a half, and the longest night is eighteen hours and a half.

On the Chart of the World.—Look in the column of the length of days on the left hand of the chart, and find the number standing nearest to the latitude of the place. This will give you nearly the length of the longest day and longest night, and subtracted from 24 will leave the length of the shortest day or shortest night.

What is the length of the longest and shortest days at

Washington	*Cape Horn*	*Calcutta*	*Rome*
Gibraltar	*Quito*	*Jamaica*	*Quebec?*

PROBLEM XII.—*To find all those Places to which the Sun is vertical for any given Day; that is, to find over whose Heads the Sun will pass that Day.*

Bring the sun's place for the given day to the brass meridian, and observe the degree over it (or its declination); then turn the globe quite round; and all those places that pass under the same degree are those to which the sun will be vertical that day at noon.

Thus, on the tenth of May, when the sun's declination is 17° 30′, all those people who live under that parallel of north latitude have the sun in their zenith that day at noon; among them you will find the inhabitants of Jamaica, the midland parts of Africa, and Pegu in India, &c.

NOTE.—The sun can never be vertical but to those who live in the torrid zone.

To what places is the Sun vertical on the

20th March	*21st June*	*23d Sept.*	*21st Dec.*
16th January	*12th Feb.*	*19th April*	*10th Oct.?*

PROBLEM XIII.—*The Day and Hour at any place being given, to find all those Places where the Sun is then rising or setting, in the Meridian or Midnight; consequently all those Places which are enlightened at that time, and all those which are in the dark.*

Find the place where the sun is vertical at the given hour by Problem 12; then elevate the pole as many degrees above the horizon as are equal to the latitude of that place, and bring it to the brass meridian; so will it then be the zenith or centre of the horizon.

Then see what countries lie on the *western* edge of the wooden horizon, for in them the sun is rising.

All those places on the *eastern* edge have the sun setting.

All those that lie *under the brass meridian* have noon or mid-day.

All those under the *lower part* of the meridian, midnight.

The twilight is that faint light which opens the morning by little in the east before the sun rises, and which gradually shuts in the evening in the west, after the sun is set. It always begins when the sun approaches within 18 degrees of the eastern part of our horizon, and ends when it descends 18 degrees below the western; when darkness commences, and continues till day breaks again.

In all those places that are eighteen degrees below the western semicircle of the wooden horizon, the morning twilight is just beginning; and in all those places that are eighteen degrees below the eastern semicircle of the horizon, the evening twilight is ending.

All those places that are lower than eighteen degrees below the horizon have dark night.

If any place be brought to the upper semicircle of the brass meridian, and the index be set to the upper 12, or noon, and the globe turned round eastward when the place comes to the eastward edge of the wooden horizon the index will show the time of the sun's setting at that place; and when the same place comes to the western side of the horizon, the index will show the time of the sun's rising.

To all those places which do not go under the horizon, the sun sets not that day.

Thus on the 30th day of April the sun's place is in the eleventh degree of Taurus; and its declination is 15 degrees north; therefore, when it is four o'clock in the afternoon that day at London, the sun will be vertical at the island of Martinico; it will then be noon at Baffin's Bay, the Island of Cape Breton, Buenos Ayres in Paraguay, &c. &c.

The sun will be setting at the Cape of Good Hope, Diarbec in Mesopotamia, &c.

The sun will be just rising at the Island of Owyhee, in the South Sea, &c.

And it will be midnight at the Island of Formosa, Manilla, Celebes, &c.

To what places will the Sun be rising, setting, &c.

On the 3d of March, at seven in the morning, in Charleston?

On the 11th May, at eleven at night, in Paris?

On the 19th October, at twelve at night, in Rome?

On Christmas day, at four in the afternoon, in Mexico?

PROBLEM XIV.—*To find those Inhabitants of the Earth that are called Antipodes.*

The Antipodes are those who live in *opposite parallels* of latitude, and *opposite meridians*, with their feet directly opposite to each other, in a line passing through the centre of the earth. They have their days and nights directly contrary, as also their seasons of the year; when it is summer with one, it is winter with the other; and when it is mid-day to the first, it is mid-night with the opposite.

Bring the place to the brass meridian, and set the index to 12; then turn the globe till the index points to the other 12; next count as many degrees southward from the equator as are equal to the north latitude of the given place, and the place lying under that degree is that diametrically opposite to it. Therefore they are Antipodes to each other. Boston and a part of the Southern Ocean, near New Holland, Patagonia, in America, and Chinese Tartary, in Asia, are Antipodes to each other.

This problem may also be resolved by a map of the globe, by counting 180 degrees either east or west of the given place, which will be the semi-circle of the same meridian, and then reckoning the degrees equal to the latitude of the given place on the opposite side of the equator.

Find the Antipodes to the following places,—

Petersburg	*Pekin*	*Calcutta*
Botany Bay	*Cape of Good Hope*	*Cape Horn*
Jamaica	*Borneo*	*Iceland.*

PROBLEM XV.—*To find all those places in which an Eclipse of the Sun or Moon will be visible.*

First, of the sun. Find the place to which the sun is vertical at the time of the eclipse, by problem 12, and bring it to the zenith, or top of the globe; then to all those places above the wooden horizon, if the eclipse be large, the sun will appear visibly eclipsed.

Secondly, of the moon. Bring the Antipodes (or country opposite to the place where the sun is vertical at the time of the eclipse) to the zenith or top of the globe, and then the eclipse will be seen in all places above the wooden horizon at that time.

Observe, that the reason for bringing the place opposite to the sun to the top of the globe, is because the moon is always in that position when it is eclipsed.

Thus September 5, 1793, the sun was eclipsed at eleven o'clock in the morning. In what part of the globe was the eclipse visible? Proceed according to the rule, and you will find the sun vertical to a part of the coast of Guinea, which point being brought to the Zenith, Europe, Africa, part of Asia and of N. and S. America, will appear in the upper hemisphere, and in each of these the eclipse was visible.

PROBLEM XVI.—*To exhibit a general Representation of the Length of Days and Nights throughout the Year, in any given latitude.*

Elevate the globe to the given latitude, bring the solstice to the brass meridian, and, setting the index to 12, there let it rest; then the parallels of north

latitude, from the Equator to the Tropic of Cancer, will represent the length of days in the summer half year, from the mean-day when the sun is in the Equator to the longest day which is represented by the tropic itself for the winter half year; the same parallels of south latitude above the horizon represent the decreasing length of days, from the mean-day at the Equator to the shortest day, when the sun is in the Tropic of Capricorn.

Thus, elevate the globe for the latitude of London, bring the beginning of Cancer to the brass meridian, and set the index to twelve. Then look where the wooden horizon cuts the Equator on the east; and if you trace up the meridian which intersects the Equator at that part to the hour circle, you will find it to lie under 6; which being doubled, gives 12 hours for the length of the mean-day, when the sun is in the Equator; about the 20th of March, and the 23d of September.

Then, in like manner, trace up the meridian that intersects the tropic of Cancer, at the wooden horizon, and you will find it lie under 8 and about a quarter; which being doubled, gives about sixteen hours and a half for the longest day, when the sun is in that tropic, about the 21st of June.

Trace the meridian that intersects the Tropic of Capricorn at the wooden horizon, and you will find it to lie under 3 and about 3-4; which doubled gives 7 1-2 hours for the shortest day, when the sun is in that tropic, about the 22d of December.

THE CELESTIAL GLOBE.

DEFINITIONS.

Declination on the Celestial Globe is the same as latitude on the Terrestrial: being the distance of a star from the equinoctial, either north or south.

Right Ascension of a star is that degree of the equinoctial which is cut by the brazen meridian, when the star is brought to the meridian; and is reckoned from the first point of Aries, eastward, quite round the globe.

Latitude of a *star* is its distance from the ecliptic, either north or south, counted in degrees of the quadrant of altitude. The sun being always in the ecliptic, has no latitude.

Longitude of a *star* is counted on the ecliptic in degrees, or in signs and degrees from the beginning of Aries eastward.

Altitude of the sun or stars is an arch of a vertical circle, contained between the sun or star and the horizon. When the sun or star is on the meridian, this arch is called the meridian altitude.

Azimuth of any object in the heavens is an arch of the horizon contained between a vertical circle passing through the object, and the north and south points of the horizon.

Vertical or *Azimuth Circles* are imaginary circles, supposed to be drawn from the zenith towards the nadir, cutting the horizon at right angles.

The *Prime Verticle* is that *Azimuth Circle* which passes through the east and west points of the horizon, and is always at right angles with the meridian.

Solsticial Points are the first points of Cancer and Capricorn, so called, because the sun, when he is near either of them, seems to stand still, or to be at the same height in the heavens, at twelve o'clock at noon for several days together.

Equinoctial Points are the first points of Aries and Libra; so called because when the sun is near either of them the days and nights are equal.

PROBLEMS.

PROBLEM I.—*To find the declination of the Sun or Stars.*

Bring the sun or star to the brass meridian, and the degree over it is its declination.

Example. Thus, the sun's declination, June 21st, is 23½ degrees N.; and on the 21st of December, 23½ degrees S.

Required the following declinations.
Of the sun on the 29th of May, and on the 25th of October.
Of the Bull's north horn; and of the Pole Star.

PROBLEM II.—*To find the Right Ascension of the Sun or Stars.*

Bring the sun's place, or the star to the brazen meridian, and the degree of the equinoctial, cut by the meridian, is the right ascension.

Example. Thus the sun's right ascension on the 21st of June is 90°, and on the 21st of December is 270°.

Required the following right ascensions,—
Of the sun on the 29th of May, and on the 25th of October.
Of the Dog Star.
Of the Bull's south eye.

PROBLEM III.—*To find the Latitude and Longitude of a Star.*

Put the centre of the quadrant of altitude on the pole of the ecliptic; and its graduated edge on the star; then the degree of the quadrant cut by the star is its latitude; and the degree of the ecliptic cut by the quadrant is its longitude.

Example. Thus the latitude of a Capella, 1st mag. in Auriga, is 23½° north, and longitude ♊ 19° south. The latitude of a Lyra 62 N. and the longitude ♍ 12½.

Required the latitudes and longitudes,—

Of Cor Caroli?
Of Arcturus in Bootes?
Of Sirius, in Canis major?

PROBLEM IV.—*To find when any of the Heavenly Bodies rise, set, or come to the Meridian.*

Rectify the globe to the latitude of the place; bring the sun's place in the ecliptic to the meridian, and set the index to 12. Then turn the globe till the given body comes to the eastern part of the horizon; and the index will show the time of its rising: bring the body to the meridian, and the index shows the time of its culmination or southing; bring it to the western horizon, and you have the time of its setting.

Thus the time of the sun's rising and setting may be found.

NOTE.—If you turn the globe about its axis, all those stars which do not descend below the horizon never set at that place; and those which do not ascend above it never rise there.

Required the time of the sun's rising, setting, &c., at Boston, on the 4th of April, the 13th of August, and 15th of November.

Required the rising, culminating, and setting of
(a) Spica Virginis, at Madrid, on the 29th of May.
The Pleiades, in Taurus, at Paris, on the 4th of June.
The upper Pointer in Ursa Major, at Delhi, on the 10th of February.

PROBLEM V.—*To represent the Face of the Heavens at any given time and Place, so as to point out all the Constellations and principal Stars there visible.*

Elevate the globe to the latitude of the place where you are, and set it due N. and S. Bring the sun's place in the ecliptic for the given day to the meridian, and set the index to XII. at noon; turn the globe westward, till the index points to the given hour; then the surface of the globe represents the exact face of the heavens at the given place.

Let the learner represent the face of the heavens
At six o'clock in the evening of the 1st of January.
At nine o'clock, on the 25th of March, and the 24th of June.
At twelve, the 1st of May and 1st. of November.

NOTE.—If the globe be taken out into the open air on a clear night, and set due N. and S., the relative situations of the constellations and remarkable stars, then visible, may easily be distinguished.

RULES FOR THE

CONSTRUCTION OF MAPS.

The earth is a sphere, and therefore no flat surface can represent with exactness the situation and comparative size and distance of its parts. But it is impracticable to form globes of a proper size for common use to represent all countries distinctly. We are therefore obliged to construct maps and charts of the various portions, which are less exact, but more convenient and useful.

A *map* is a representation of the earth's surface, as it would appear to an observer at some distance from it, and can only include half the globe at once.

A *chart* is a representation of the earth's surface as if it were spread out on a plain or level, and may exhibit the whole surface of the earth in a single view.

Various methods have been devised to construct maps by which the appearance of countries shall be most correctly exhibited. The four principal methods in use are the Orthographic, the Stereographic, the Globular, and Mercator's Projection.

In the *Orthographic Projection*, the observer is supposed to be at an infinite distance, and to draw the various parts of the earth in the points where they would appear on a sheet of glass, or other transparent plane, placed between him and the globe. In this case, it is evident that a part of the globe nearest the observer, or the top, would be correctly represented: but the sides, or those parts near the circle which bounded his view, would not be seen distinctly and would be crowded together. In this projection, therefore, the middle of the map only will be correct.

In the *Stereographic Projection*, the observer is supposed to be on one side of the earth, and to draw the countries on the opposite side, as they would appear on a transparent plane passing through the centre. In this projection, the countries near the centre of the map are crowded, and the borders only are correctly represented.

The *Globular Projection* is a modification of the Stereographic, and is more correct and useful than either of the preceding. In this projection, the eye is supposed to be situated at the distance of the sine of 45 degrees from the sphere, and every portion of the sphere is represented very nearly in its proper proportion and size.

The Globular Projection is usually made on the plane of a meridian, as in the map of the world. A similar projection on the plane of the equator, is usually called the *Equatorial* or *Polar Projection*.

In all these projections, no more than one half of the globe can be exhibited in a single connected view; and it is difficult to trace the points of the compass and the course and distance of a voyage upon a map of either of these kinds.

For the convenience of mariners, another projection has been devised, which is called *Mercator's Projection*, or *Mercator's Chart*. In this, the meridians and parallels are all straight lines. The parts near the poles are of course very much enlarged. But the degrees of latitude diminish in going towards the poles; and thus the error is so far corrected, that the courses and distance

of one place from another can be ascertained with sufficient exactness, and the mariner knows how to direct his voyage.

The following directions will enable the student to construct maps of various portions of the earth, in the most correct and useful methods which have been devised.

DIRECTIONS.

In drawing maps of the earth's surface, the *water* is usually left white. The *shore* adjoining the sea should be shaded with lines or colours. *Rivers* are represented by lines winding according to their course. *Mountains* are shaded as in a picture. *Towns* and *cities* are represented by small circles or squares. Particular marks may be added to indicate their size, or rank, or some circumstance which distinguishes them; and on maps of single countries, other marks are sometimes added for churches, mines, mills, &c. In order to draw these objects in their proper places, it is necessary,

1st. To form a scale for the map, or to determine how large a degree shall be.

2d. To draw meridians and parallels of latitude for every five or ten degrees, according to the size of the map.

3d. To mark the latitude and longitude of all important points on the shores, rivers, mountains, and boundaries, and draw a line through them; and to mark the place of cities.

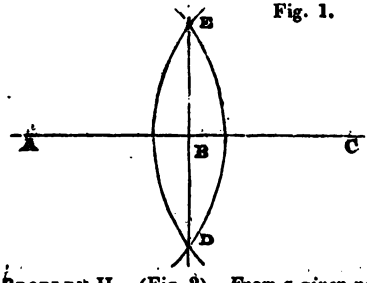
4th. To shade the shores and mountains, and write the names of the most important objects.

The following problems will show the proper methods of drawing the meridians and parallels of latitude which form the skeleton of the map.

INTRODUCTORY PROBLEMS.

PROBLEM I.—(Fig. 1.)—*To divide a line (A. C.) into two equal parts.*

Fig. 1.

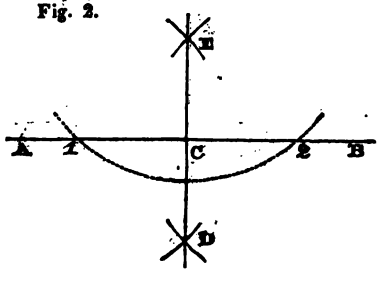


1. From the points A and C as centres, with any distance in the compasses greater than half A C, draw arcs of circles, cutting each other in D and E.

2. Through the points D and E draw the line E D, and it will cut A C in the middle of the line, or divide it into two equal parts, A B and B C.

PROBLEM II.—(Fig. 2)—*From a given point (E,) to let fall a perpendicular on a given line A B.*

Fig. 2.



1. From the point E draw a part of a circle 1, 2, cutting A B in the points 1 and 2.

2. From these points describe the two arcs cutting each other in D and E.

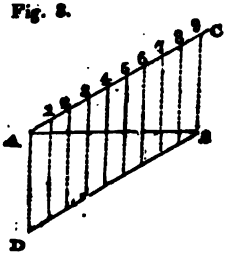
3. Draw a line joining these two points, and it will be perpendicular to the line A B

Problem III.—(Fig. 2.)—*To erect a perpendicular from a given point (C.)*

1. On each side of the point C, set off equal distances, C 1, and C 2.
2. Describe the arcs and erect the perpendicular E C, as in the last problem

Problem IV.—(Fig. 3.)—*To divide a straight line (A B,) into any number of equal parts.*

Fig. 3.

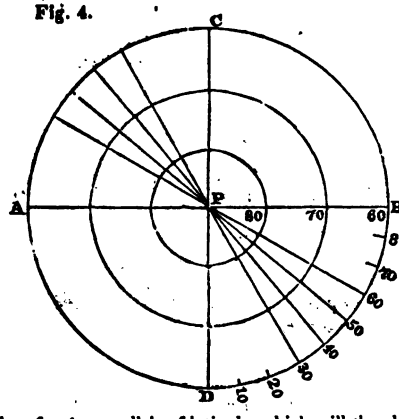


1. Take any distance in your compasses, and draw arcs of circles from A and B.
2. Draw two lines, A C, and B D, from the points A and B, touching these circles, and they will be parallel lines.
3. Take any small distance in your compasses, and set it off upon the line A C, as many times as the number of divisions required. Set off the same distance on the line D B.
4. Join the divisions of these two lines by other lines, as at A, 1, 2, 3, &c., and they will divide the line A B into the equal parts required.

RULES FOR CONSTRUCTION.

1. *To construct a map of the earth on the equatorial projection.*

Fig. 4.

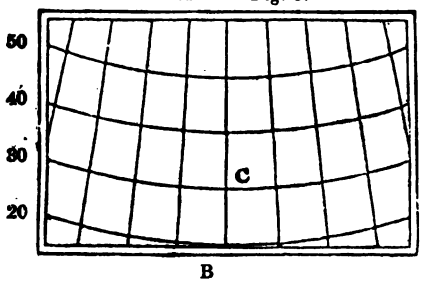


1. Describe the circle A C B D of the size proposed for the map, and draw the diameter A B, with C D, at right angles to it as the first meridian.
2. Divide the arc D B, into nine equal parts,(each of which will be 10 degrees,) and through the centre P and each of these points, draw the lines P 10, P 20, P 30, P 40, &c., to represent the meridians. Divide A D and draw the meridians in a similar manner.
3. If the projection is intended to include one hemisphere, divide the line P B into nine parts and draw circles through these points for the parallels of latitude, which will then be at 10 degrees distance from each other. If it extends only to the regions around the pole, divide the line into spaces of 10 degrees, and draw the parallels as before. The map will then be prepared for laying down the shores, rivers, &c.

This method of construction is very correct with regard to countries around the poles, and should be used entirely for the polar regions. But in advancing towards the equator, the meridians are so much spread as to render the map very incorrect. The following method has been devised to correct this error, and use the same principles of projection for countries in middle latitudes

II. ***To construct a map of countries in middle latitudes, on the Equatorial Projection.***

A Fig. 5.



1. Draw a line A B as the first meridian; assume any distance (B C) for ten degrees, and form a scale of degrees and parts or miles.

2. Set off this distance from the lowest latitude you intend for your map (as B,) until you reach 90 degrees, which will be the place of the pole.

3. From the pole describe the circles 50, 40, 30, 20, cutting the first meridian in the points of division, and these will be the parallels of latitude.

4. Look in the table following, and find the length of 10 degrees of longitude in the highest latitude of your map (suppose 50,) and taking this in your compasses, lay it off on the circle 50, on each side of the first meridian A B.

5. Find the length of ten degrees for the lowest latitude, (suppose 20,) and set it off in like manner on the circle 20.

6. Draw lines through the corresponding points on these circles, and you will have the meridians represented, diverging in a similar proportion with those on the globe, and you may proceed to construct the map.

TABLE

OF THE LENGTH OF ONE DEGREE OF LONGITUDE

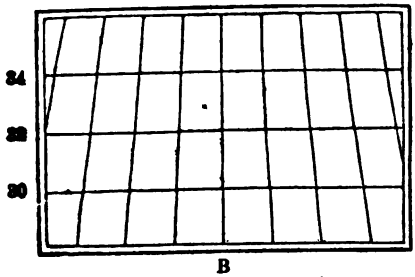
For every degree of Latitude, in Geographical miles.

Lat.	*Miles.*	*Lat.*	*Miles.*	*Lat.*	*Miles.*	*Lat.*	*Miles.*
1	59,99	24	54,81	47	41,00	69	21,51
2	59,96	25	54,38	48	40,15	70	20,52
3	59,92	26	54,00	49	39,36	71	19,54
4	59,85	27	53,46	50	38,57	72	18,55
5	59,77	28	53,00	51	37,76	73	17,54
6	59,67	29	52,48	52	37,05	74	16,53
7	59,55	30	51,96	53	36,11	75	15,52
8	59,42	31	51,43	54	35,27	76	14,51
9	59,26	32	50,88	55	34,41	77	13,50
10	59,09	33	50,32	56	33,55	78	12,48
11	58,89	34	49,74	57	32,68	79	11,45
12	58,69	35	49,15	58	31,70	80	10,42
13	58,46	36	48,54	59	30,90	81	9,38
14	58,22	37	47,92	60	30,00	82	8,35
15	58,00	38	47,28	61	29,09	83	7,32
16	57,60	39	46,62	62	28,17	84	6,28
17	57,30	40	46,00	63	27,24	85	5,23
18	57,04	41	45,28	64	26,30	86	4,18
19	56,73	42	44,95	65	25,36	87	3,14
20	56,38	43	43,88	66	24,40	88	2,09
21	56,00	44	43,16	67	23,45	89	1,05
22	55,63	45	42,43	68	22,48	90	0,00
23	55,23	46	41,68				

In maps which do not embrace a very large extent of country, and do not approach very near to the poles, or in larger countries near the equator, the curvature of the parallels of latitude is so small that it is more convenient to draw them as straight lines, and the error produced is very small. This has given rise to a modification of the preceding method, called the Plain Projection.

III. *To construct a map of a country on the Plain Projection.*

A Fig. 6.



B

1. Having constructed a scale of degrees, according to the size of your map, divide the first meridian into as many parts as you wish for parallels.

2. Through the points of division draw the straight lines 30, 32, 34, &c. parallel to each other, to represent parallels of latitude.

3. Find the length of the degrees of longitude in the given latitudes from the table, and lay them off on the parallels, as in the last method.

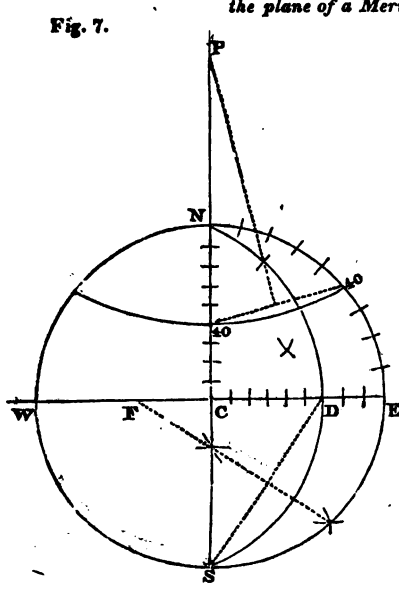
4. Draw the meridians through these points, and proceed to construct the map.

The map of the United States in the atlas accompanying this work, is an example of this projection.

As none of these methods will represent a *hemisphere* with any correctness, we must resort to the Globular Projection for this.

IV.—*To construct a map of the hemisphere by the Globular Projection on the plane of a Meridian.*

Fig. 7.



1. Describe the circle N E, S W as the meridian, and draw the diameter W E for the Equator.

2. Erect the perpendicular N S for the first meridian.

3. To describe the meridians:

(1.) Divide C E, representing 90 degrees of a circle, into nine equal parts. Then on the globular projection, the meridians for every ten degrees should be circles, passing through these points and the poles N and S.

(2.) To find the centre of these circles, draw a line from each point to one of the poles, as D S, and bisect it by a perpendicular cutting the equator as in the point F.

3. From the point F describe the circle N D S which will be the meridian for that point.

Proceed in the same manner with every other; and on the other side of the first meridian divide the line C W, and draw the meridians in the same manner.

4. To describe the parallels of latitude:

(1.) Divide the line C N, representing 90 degrees on the first meridian, into nine equal parts, and also the arc N E representing 90 degrees on the meridian of projection. Then the parallels of latitude should pass through the corresponding points respectively of the two meridians.

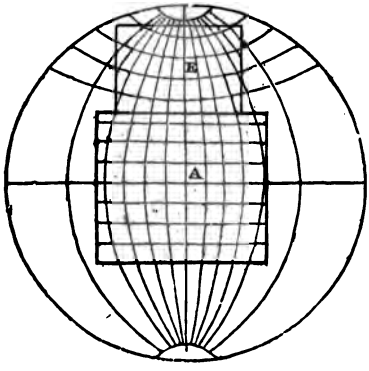
(2.) To find the centre of the parallels, draw lines through the corresponding points, and bisect them by a perpendicular, cutting the first meridian, as at P.

(3.) From P as a centre, describe the circle 40. Proceed in the same manner at the other points and on the opposite side of the equator, and then proceed to draw the countries, islands, &c., belonging to this hemisphere.

NOTE. The centres of all the meridians will be found in the line representing the equator; and the centres of all the parallels in the line representing the first meridian. Both will need to be extended beyond the circle. This projection is usually employed in maps of the world.

V. *To construct a map of a portion of the earth less than a hemisphere, on the Globular Projection.*

Fig. 8.



1. Draw the equator and that portion of the hemisphere which includes the country to be represented, and describe the meridians and parallels according to the methods just directed for the Globular Projection.

2. Mark out a portion on each side of the first meridian, and in the proper latitudes sufficient to include the country as at E or A, and lay down the country upon it by latitudes and longitudes.

In countries lying near the equator, or on both sides of it, the parallels may be made straight lines, without any important error, as in the example at A, and in the maps of Africa and South America accompanying this work.

VI. *To construct a Chart on Mercator's Projection.*

(See Chart of the World.)

The Chart of the World is an example of this projection, which will fully illustrate its construction.

1. Draw a straight line to represent the equator, and divide it into the number of degrees of longitude intended for your map.

2. The degrees of longitude being all equal in this projection, draw straight lines, perpendicular to the equator, at every 10 or 15 degrees, to represent the meridians.

This will of course enlarge the countries towards the poles in longitude. In order to preserve the distance and bearing of places, the degrees of latitude

must increase in the same proportion, and for this purpose the proportional increase is laid down in tables of Meridional Parts; therefore,

3. Look into the table of meridional parts, and set off every degree of latitude from the equator, not of equal length, but of the length put down opposite to it in the table. Thus, instead of setting off 600 parts or 10 degrees for the parallel of 10° set off ten degrees and 3 miles or minutes, or 603 parts. Instead of 20 degrees or 1200 parts for the parallel of 20°, set off 20 degrees 25 minutes, or 1225 parts. Instead of 30 degrees for the parallel of 30° set off 30° 88, and so on, taking care to set off every latitude from the equator.

If the chart does not include the equator, then subtract the meridional parts from the lowest latitude (suppose 30) from the meridional parts for each higher latitude (as 40°, 50°, &c.,) and set off the differences from the *line of the lowest latitude*.

4. Through the points 10, 20, 30, &c. draw straight lines parallel to the equator, to represent the parallels of latitude, and lay down the countries, &c. as in other projections.

As these charts are chiefly designed to represent the coasts, they are usually shaped on the land side.

TABLE OF MERIDIONAL PARTS

IN A DEGREE OF LATITUDE FOR EVERY DEGREE OF LONGITUDE,

Each part equal to a geographical mile at the Equator.

Deg.	*M. Parts.*	*Deg.*	*M. Parts.*	*Deg.*	*M. Parts.*	*Deg.*	*M. Parts.*
1	60	24	1484	46	3116	68	5631
2	120	25	1550	47	3203	69	5794
3	180	26	1616	48	3292	70	5966
4	240	27	1684	49	3382	71	6146
5	300	28	1751	50	3474	72	6335
6	361	29	1819	51	3569	73	6534
7	421	30	1888	52	3655	74	6746
8	482	31	1958	53	3764	75	6970
9	542	32	2028	54	3865	76	7210
10	603	33	2099	55	3967	77	7467
11	664	34	2171	56	4074	78	7745
12	725	35	2244	57	4183	79	8046
13	787	36	2318	58	4294	80	8375
14	848	37	2393	59	4409	81	8739
15	910	38	2468	60	4527	82	9145
16	973	39	2545	61	4649	83	9606
17	1035	40	2623	62	4775	84	10137
18	1098	41	2702	63	4905	85	10765
19	1161	42	2782	64	5039	86	11533
20	1225	43	2863	65	5179	87	12522
21	1289	44	2946	66	5323	88	13917
22	1354	45	3030	67	5474	89	16300
23	1419						

THE END

NOV 25 1930